COMMODORE

JUNE ISSUE 1985

COMPUTING INTERNATIONAL

£1

BELGIUM FR1.30 CANADA $3.50 USA $3.25 GERMANY DM 7.5

Mind-Benders!

Games to twist your brains

Home Discovery

Get your computer to help about the house

Robotics —

Turtle runs wild

Business

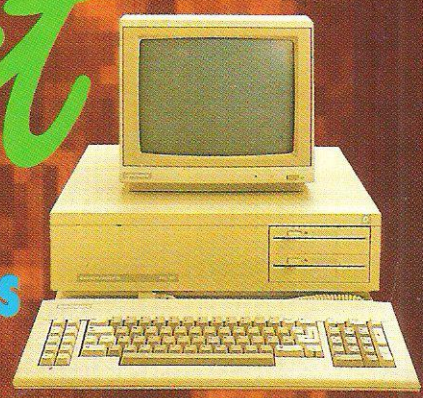
The latest packages and applications

Hints and Tips for the 64, C16 and PET

PLUS

Games Reviews
All the newest releases

Get the best



Commodore's PC

Back in the business of business

0 61399 70325 11

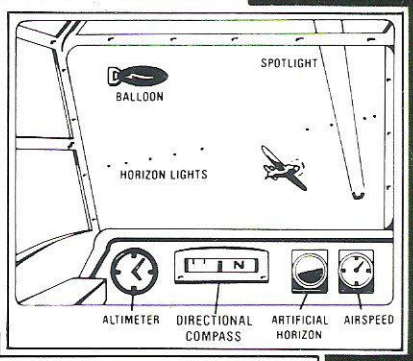
WIN

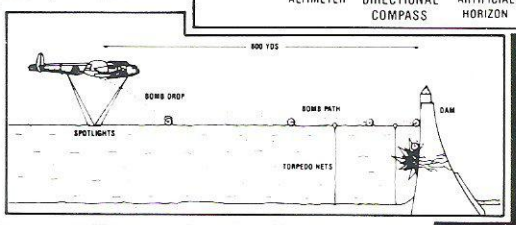
LOADS OF GREAT COMPETITION PRIZES

THE DA BUST

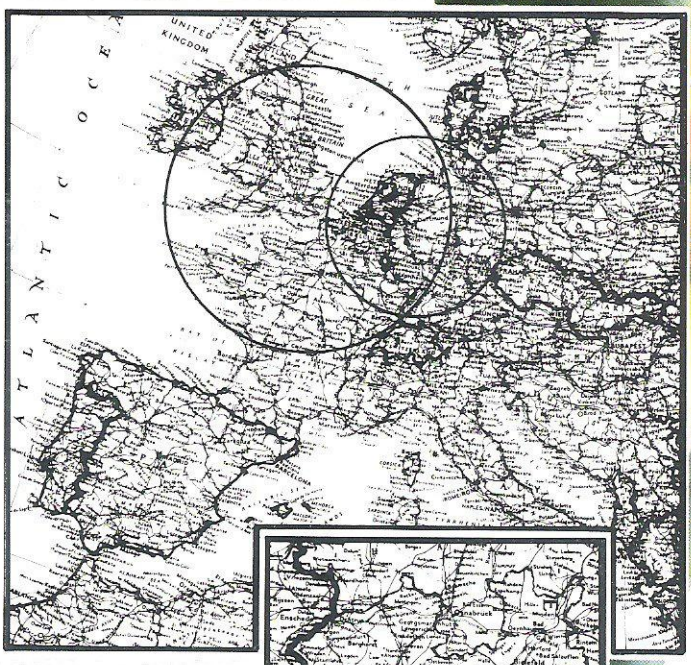
At 21.15 hours on the evening of May 16th 1943 a flight of specially prepared Lancaster bombers left Scampton Airfield for Germany. After months of planning and preparation Wing Commander Guy Gibson and his 617 Squadron were at last embarking on a mission so daring that it would guarantee them a place in the annals of history.

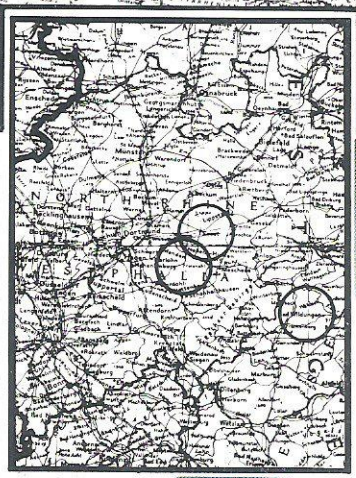
The mission would strike at Germany's industrial heartland. If the giant dams of Moehne, Eder and Sorpe could be breached, millions of tons of water would flood the Ruhr, cutting vital water supplies to steelworks and homes, flooding factories, power stations and farmland, and bring the important Mittelland Canal to a virtual standstill.



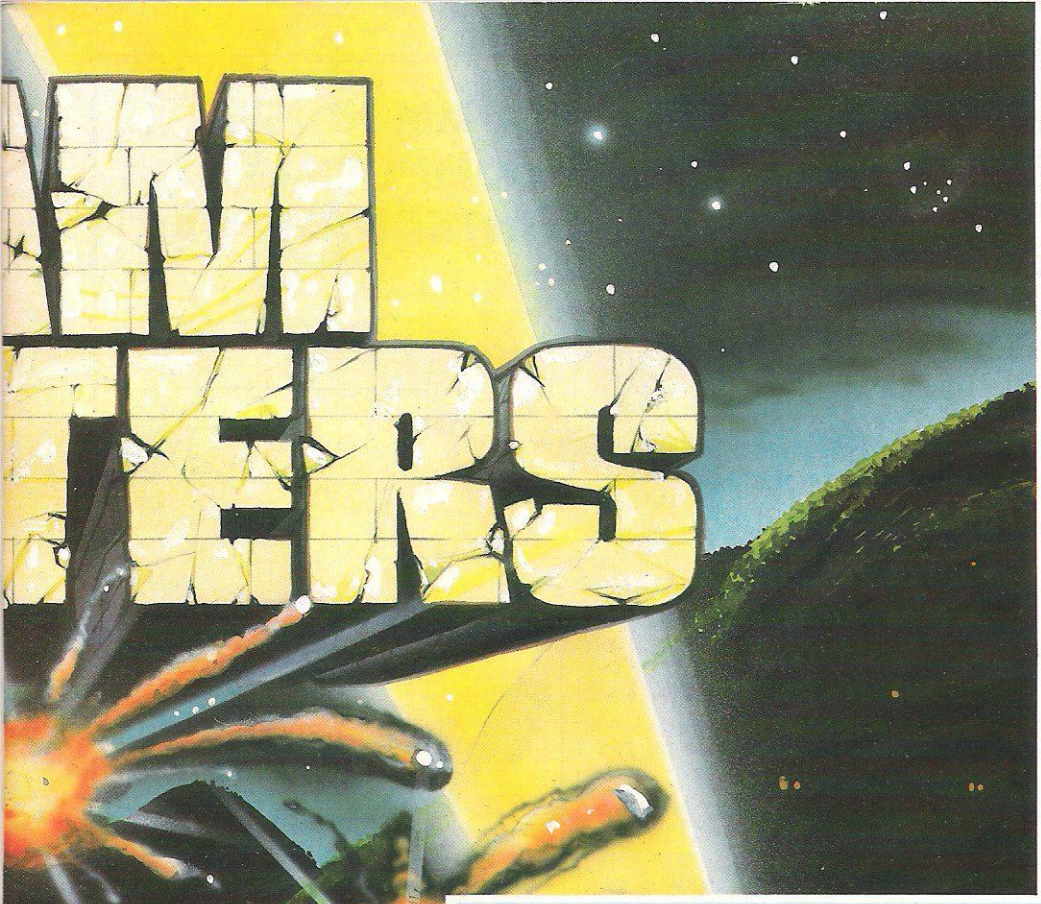


Of course the successful conclusion of this raid is now legendary, the young men who took part are acknowledged as heroes; and now U.S. Gold in conjunction with Sydney Development Corporation and the International Computer Group are giving you the opportunity to relive the excitement, tension and drama of this famous mission.



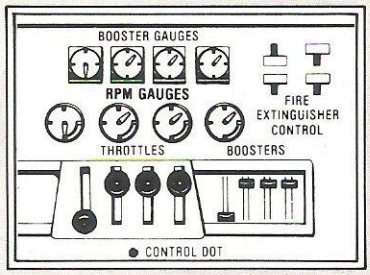


You will be able to play the part of **PILOT**, flying the Lancaster from Scampton to the target, **NAVIGATOR** using screens maps of Europe,



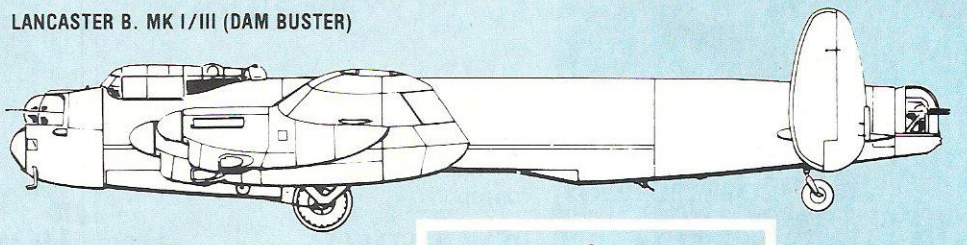
FRONT GUNNER, REAR GUNNER, BOMBARDIER and **FLIGHT ENGINEER**.

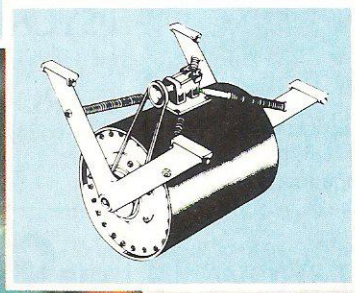
You will have to fly across Europe at low level to avoid radar; lookout for the deadly ME109 night fighters, dodge barrage balloons, spotlights and flak. At the target you will need all your nerve and skill to control the aircraft and release your deadly payload at just the right moment while avoiding enemy attack.



Game Features: **Superb graphics and sound, realistic joystick control, Pilot's screen and indicators, multiple screen navigators maps, front and rear gunners screens, bomb sighting screens, engineer's indicators, and much much more.** The package comes complete with **comprehensive flight instructions, maps, and confidential documents including authentic material by Barnes Wallace and Wing Commander Guy Gibson.**

LANCASTER B. MK I/III (DAM BUSTER)





Officially endorsed by 617 Squadron of the R.A.F., Dambusters is available for **Atari** and **Commodore 64** computers with versions for **Spectrum, BBC** and **Amstrad** coming soon.

U.S. GOLD
All American Software

U.S. Gold is available from all leading computer stores and selected branches of

BOOTS · W.H. SMITH · JOHN MENZIES · WOOLWORTH · WILDINGS

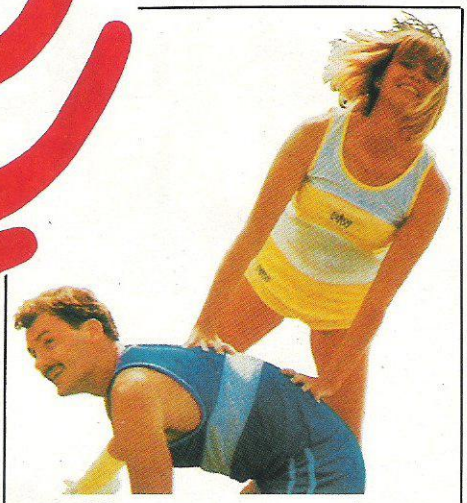
Dealers! For information on how to become a U.S. Gold stockist contact CentreSoft, Lightning, Microdealer, Tiger and all other leading distributors or write to:
U.S. Gold Limted, Unit 10, The Parkway Industrial Centre, Heneage Street, Birmingham B7 4LY. Telephone 021-359 3020. Telex 337268.

The one magazine every Commodore owner needs

COMMODORE COMPUTING INTERNATIONAL

Inside

Vol 3 No 11
June 1985



Feature of the month

HOME HELP 10
How your computer gives a helping hand around the house: we examine how it's done now and how it could, and will, be better in the future

SLIMMING 12
Two different approaches to this age-old concept

PSYCHEDELIA 13
Put colour into your party

GARDENING 13
Give your garden the designer's touch

...NEWS

GENERALLY 7
New man in charge at CBM UK while future of older machines is pondered; a wrap up of London Festival of Computing; and a far-in-advance look at the PCW Show

COMMODORE SHOW 15
As the tab of participants grows for the Sixth Annual Commodore Show, CCI gives you a preview of what to expect

PRODUCT UPDATE 53
64 gets mouse control; the C16's virtues for the 64; and new potential for educational programs

...FEATURES

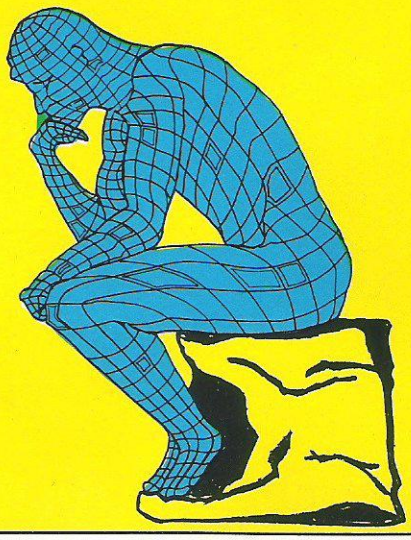
ROBOTICS 38
Following in the track of the robotics craze, Valient's Turtle is becoming a useful tool in many ways

...REVIEWS

PSI-Q AND IQ 12
Two programs in the home use line – one to measure psychic powers, one to measure intelligence

...GAMES SECTION

MINDBENDERS 18
The excitement of stretching your mind with computerised board games; a grand selection of computer chess examined by a Chess Grandmaster; and a look at some of the mindbending items on offer



REVIEWS 25
Our regular parade of arcade and adventure reviews to give you guidance

NEWS 30
BC is back; Adrian (dead brilliant) Mole is on his way; and Theatre Europe shows what should never arrive at all

GAME OF THE MONTH 33
The CCI Readers Panel checks out Gremlins

COMPETITION 34
The billion dollar Airwolf helicopter is the subject of the challenge in this month's giveaway from Elite Systems

TOP TWENTY 36
Impossible Mission completes its mission to get to the number one spot

...CONSTANT FACTORS

READERS WRITE 16
Computer author Rae West answers those puzzling quibbles

HINTS AND TIPS 42
Readers share precious morsels they've discovered for the VIC 20 and C16

BASIC 45
What you need to know about algorithms in basic programming

MACHINE CODE 46
Make your program more tidy, thus more efficient

...BUSINESS

NEW PRODUCTS 55
A quick stock program and PC extras

PET PAGES 56
Give your PET a lighter side with your own word puzzles

FILE IT 61
An in-depth look at Orpheus' new database

SWIFTLY 61
Audiogenic's spreadsheet faces the test

HOME BASE 62
Traditionally games, US Gold branches into business with a new database package

Next Month

It's show time, folks, and CCI will be there to give you the low down on the Sixth Annual Commodore Show. Our next issue will have the details.

And then we'll make war! If you think summer time is hot, there'll be plenty of war games reviews in the next issue to really make you sweat!

For the younger folks (or their Mums and Dads) we'll look at several educational packages just to keep you up to date.

All that and not to mention the usual reviews, features, competition and business news we offer you!

ADVERTISING GUIDE

ADVENTURE INTERNATIONAL 35
Gremlins – The Adventure: You've seen the film . . . got the Tee-Shirt . . . now buy the game?

APSTOR LTD 54
'Alpha 10' – a high capacity portable cartridge disk system designed for the Commodore range.

ARGUS PRESS SOFTWARE 21
The Bulge: Battle for Antwerp . . . Accurate strategic simulation . . . Real-time combat. Be the hero of the skies.

ARROW MICRO SERVICES 47
A wide range of CBM 64 utilities.

BRITISH SOFTWARE 44
Operation Swordfish – an exciting arcade war game for the CBM 64.

CALCO 45,54
Business software on mail order including Vizastar 64, Figaro 64 and Jetpack.

CHEETAH MARKETING 6
The Rat, Interpod interface, Sweet Talker and other members of the 64/VIC 20 PERIPHERALS gang.

DOSOFT 14
Mega-Disk: Diskus 1 and R.B.S. — helping to make your life easier — available this month.

DURELL 17
Shades — not a pair of sunglasses — but Durells' fully animated 3D Adventure . . . over 64 colourful locations!

ELECTRONIC AIDS 45
Software at low, low prices for the Commodore Businessman.

GALAXY SOFTWARE 47
Commodore compatible utilities including Disk Commander; Personal Bank Manager and Add Man Accounting Suite.

GENERAL AUTOMATION FACILITIES 14
Three new pieces of hardware to enhance your 64.

JCL LTD 39
Officially approved software for the serious user.

KOSMOS 36
Gutten Morgen, Bonjour or Buenos Dias? The choice is yours with these modern language learning programs.

LLAMASOFT 29
Psychedelia: Create your own lightshows and turn up the Hi-fi full blast — it'll blow your mind. Mellow, man . . . mellow.

MICRO CONTROL SYSTEMS 39
Comprint circuit board for CBM 64 and Epsom printer. No more connection problems.

MICROCLASSIC 32
New 3D Chess Game. Special launch offer — £2.00 off!

MICROPORT 32
One of our longest established advertisers displays their range of software.

MPS SOFTWARE 47
Offer you 'Warp *5' — a 1541 speed loader and 'Tool Kit Mk 2' — a collection of 1541 disk utilities. Even faster — even better.

OASIS SOFTWARE IBC
White Lightning: Program of the year L.E.T., C.T.A. Feb 1985. The Games Designer Professionals use.

ODIN 41
Nodes of Yesod — Brand new. Odin are still keeping this one very top-secret.

PRACTICAL PROGRAMS LTD 14
Pace — weight loss program. Design a diet exactly suited to you. Get rid of that beer-gut once and for all!

RAE WEST 32
Programming the Commodore 64 — The Definitive Guide with programs available on tape or disk plus other books on PET/CBM & VIC.

ROCKFORT PRODUCTS 59
The Rockfort Disk Storage System — practical and aesthetically pleasing.

SIMPLE SOFTWARE 54
All sorts of Business software for Commodore machines. The answer is Simple?

SUPERSOFT OBC
Business software; Music Master and Games all under one roof.

TANDATA MARKETING 24
Complete communications packages to turn your 64 into a powerful Viewdata terminal. This month — Free subscription Prestel and Micronet.

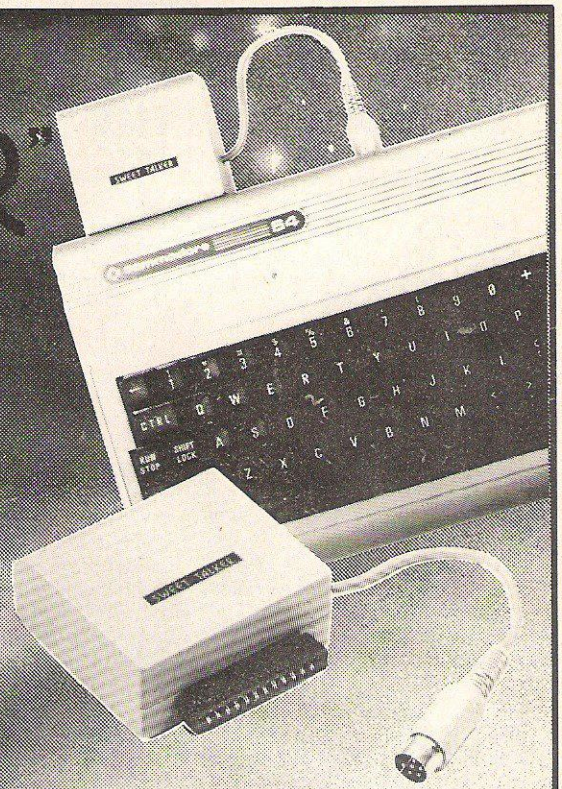
TRIGSOFT 47
Back up problems are solved with Trigsofts' Tape Transfer Dual Cassette Interface.

US GOLD 2,3,9
The Dam Busters — The game of the legendary raid, lots of exiting features. Bounty Bob Strikes Back — an even tougher follow-up adventure to Miner 2049er.

VIZA 60
The information processor — Vizastar 64. Incorporating the latest in user-friendliness. Spreadsheet, information filing system and simultaneous on-screen graphics.

ZERO 39
Commodore compatible Hardware for grown-ups.

COMMODORE SWEET TALKER"

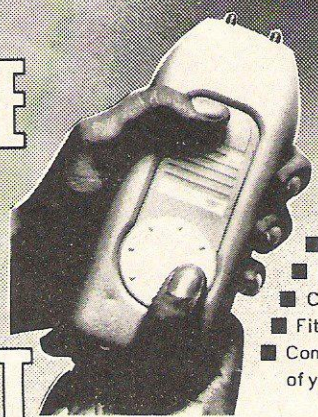


THE CHEETAH "SWEET TALKER" JUST PLUGS INTO THE BACK OF THE COMMODORE 64 BASED ON AN ALLOPHONE SYSTEM, YOU CAN EASILY PROGRAM ANY WORD, SENTENCE OR PHRASE CREATING EXCITING SPEECH AND BROADCASTING IT THROUGH YOUR T.V. FULLY CASED, TESTED AND GUARANTEED.

THE "SWEET TALKER" COMES COMPLETE WITH DEMONSTRATION TAPE AND FULL EASY TO FOLLOW INSTRUCTIONS.

Mind blowing at only **£24.95**

THE AGE OF THE R.A.T



CONVENTIONAL JOYSTICKS ARE DEAD!

The Cheetah Remote Action Transmitter is the most sophisticated computer contoller available

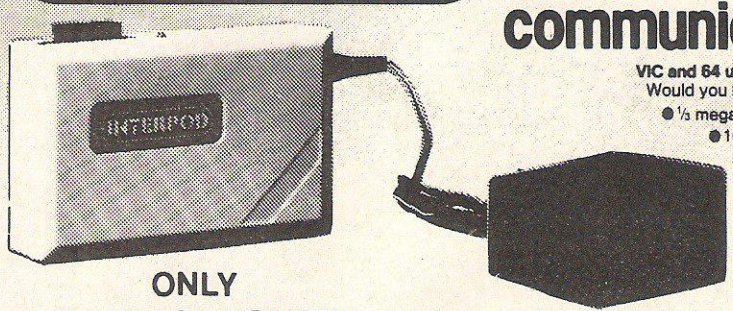
It has these features:

- Infra Red transmission–so there are no leads trailing across the living room. Just sit back in your chair up to 30 feet from your machine.
- Touch control–no moving parts, extremely fast, long life.
- No extra software required.
- Can be used with all Commodore Joysick software.
- Fits comfortably in your hand for long play periods.
- Comes complete with receiver/interface unit which simply plugs into the rear of your Commodore.

Simply incredible at **£29.95**

INTERPOD

Now the VIC 20 and 64 can communicate with PET peripherals



VIC and 64 users

Would you like to be able to access any of these peripherals from your computer?

● ⅓ megabyte disks (Commodore 4040 drive) ● 1 megabyte disks (Commodore 8050 drive) ● 10 megabyte disks (Commodore 9090 hard disk) ● Printers including a wide range of inexpensive IEEE and RS232 matrix and quality printers ● IEEE instrument such as volt meters, plotters, etc. Now you are no longer limited by the VIC or the 64's serial bus. Simply by attaching INTERPOD you can vastly increase the power of your VIC20 and when used with the 64, INTERPOD turns the computer into a really powerful system. With INTERPOD the VIC and 64 become capable of running really professional quality software such as Word-processing, Accounting, Instrument control and many more.

INTERPOD will work with any software. No extra commands are required and INTERPOD does not affect your computer in any way.

ONLY **£59.95**

Prices include VAT, postage & packing.
Delivery normally 14 days.
Export orders at no extra cost.
Dealer enquiries welcome.

Cheetah, products available from branches of Jonn Menzies Boots WHSMITH Rumbelows WOOLWORTH Spectrum dealers and all good computer stores.

Cheetah Marketing

Cheetah Marketing Ltd. 24 Ray Street, London EC1R 3DJ. Tel. 01 833 4909. Telex: 8954958.

Comment...

Dear Reader,
It's been an eventful month at Commodore UK. In addition to changing faces — marketing manager David Gerrard moves out, new general manager Nick Bessey moves in — Commodore officially launched it's IBM compatible business computers, the PC-10 and PC-20.

Commodore should be pleased at the results of a report published recently by Intelligence Electronics of France (Corporate IBM PC Users in the UK). For while IBM are gearing up to sell vast quantities of PC ATs, the report shows that users are still clamouring for standard PCs.

While indicative of a move back to its roots to re-establish a firm footing in the business market, Commodore is by no means ignoring the home computer market. In fact many 64-owners may well be tempted to upgrade to Commodore's new 128 which will run all 64 software.

These new machines will be just some of the major attractions at the forthcoming Sixth International Commodore Show (June 7-9, Novotel, London). There will be exciting new software — including a Bond title — competitions, music and much more. CCI will be there, of course, with a number of attractions of our own. So don't miss it!

Meanwhile, in this issue we tell you how your 64 can help out in the home — not in terms of robotics, but taking on the role of gardener, slimming adviser, entertainer and more. And in contrast to relying on your computer for advice, we look at some Mindbending board games including thoughts from a Grandmaster on how computer chess stands up against the real thing.

Sue Pearce

Susan Pearce
Editor

Editor ..... Susan Pearce
Staff writer ..... Viola Gienger

Production Assistant . Polly Strauss
Illustration ..... Max Millian

Advertisement Manager ..... Peter Chandler
Assistant Advertisement Manager ..... Paul Fenton
Subscriptions Executive ..... Alison Stevens

Publisher ..... Antony Jacobson

Cover Design .... Graham Baldock
Cover photography ... Digital Arts

Contributors:
Raymond Keene
Deborah Black
Rae West
Tony Lydeard
Mike Hart
David Bowdrey
David Hornsby

Published by Croftward Limited
Finsbury Business Centre,
40 Bowling Green Lane, London EC1
Distribution by Magnum Distribution Ltd, Clerks Court, 18-20 Farringdon Lane, London EC1R 3AU.

Printed by Chase Printers Group, London and St. Austell.

ISSN 0267-596X

Telephone 01-278 0333
Editorial ext.274
Advertising ext.280
ext.286
Subscriptions ext.274

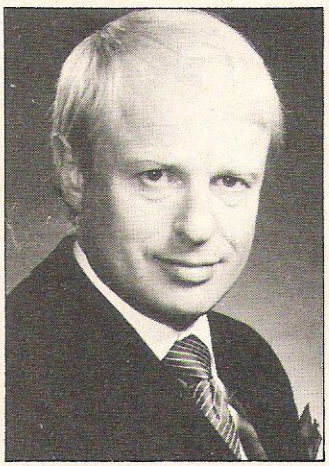
Commodore Computing International - an independent magazine for Commodore computer users - is not connected in any way with Commodore Business Machines UK Ltd. It is published 12 times per year by Croftward Limited. The publishers do not accept liability for any incorrect statement or errors contained in material from independent sources or authors which may be reproduced from time to time.

© Croftward Limited 1985

...news...news

CBM brings in man, machine on IBM trail

The timing of the appointment of a former IBM man to chief of Commodore Business Machines' UK operations was not unnoticed recently. The announcement came only three working days after the launch of Commodore's IBM-PC compatible machine.



Commodore says the new general manager, 36-year-old Nick Bessey, was "the key strategist behind IBM's new UK Dealer Channel & Retail Marketing Division." Interestingly, those two factors — dealer cooperation and strong marketing — are key elements in CBM's own strategy for the new machine, which was presented to selected dealers on 21 March and to the press on 22 March. Bessey replaces Howard Stanworth, who was with the company about two years until he left in February.

At the press launch, Commodore UK Marketing Manager David Gerrard (who has since also left CBM after about six months with the company) said, "Our thrust will combine the now classic Commodore approach of producing the right product, at the right time and — as I've already emphasised — the right price, plus a carefully and throughly developed support package covering both dealers and users."

And UK Sales Manager Paul Welch added later, "Commodore have not only given the PC a substantial price benefit over its competitors, but built around it a sales infrastructure and support packages for dealers and end users, which we believe will ensure a rapid increase in our market share in forthcoming months."

Bessey, who had been with IBM for 12 years, took office at Commodore's Corby manufacturing plant on 9 April. At IBM, he moved rapidly from salesman to specialist marketing manager to marketing manager for office systems. At one point, the company named him its top UK marketing manager. By 1977, he was in New York and in charge of planning IBM's marketing in Canada, Japan and Australia. He became UK operations manager in 1981 and moved further up the ladder to his most recent post in which he led the product management team in "establishing new dealer channels for IBM's low price tag products, like the IBM PC," according to Commodore.

CBM says his priorities will focus on "strong product strategy coupled with value-added dealer marketing programmes" on the business side and Commodore's reputation in the high street chain stores for the home computer side.

"My opportunity to play a leading role comes at the right time for me and for Commodore," Bessey said.

Prime Minister

Two young Commodore production line workers travelled to the House of Commons in London to present Prime Minister Margaret Thatcher with the one millionth and two millionth computers, both 64s, to be manufactured at the Corby plant.

Seventeen-year-old Carmella Polcaro and 19-year-old Robert Gray, both of Corby, gave the computer to Mrs Thatcher on behalf of the plant's workforce. Mrs Thatcher will in turn present the 64s to the Pope John School in Corby.

Education show theme

Planning is already underway for one of the year's major exhibitions, the Personal Computer World Show to be held in September at London's Olympia complex.

Education will be the major theme and Commodore one of the major exhibitors along with Acorn, Apple, Sinclair and Torch. One of the features will be a Micros in Education centre where teachers can get specialist advice and information on products and applications.

The organisers plan to use all of Olympia, including the new Olympia 2, and the National Hall. Olympia 2 will be used strictly for business computing exhibitors and a conference and seminar programme hosted by the National Computing Centre is one of the main business attractions.

There will also be an exhibition called Tomorrow's Micro Home put together by a yet-unnamed electronics company to show its idea of "the living room of the future."

CP/M cartridge

Another matter of interest for Commodore owners lured by the wonders of CP/M is that CBM has stopped producing its CP/M cartridge for the 64, of which very few have been sold anyway and those to real enthusiasts.

Rae Potter says while the cartridge worked well with 64s produced about the same time, later versions of the computer gave some problems with the utility, enough that "we found the reliability of the product was too low to make it on the open market."

The cartridge also had too little software to go with it, forcing users to design their own. Furthermore, the upcoming 128 will offer CP/M capability in one of its modes making it all more convenient anyway.

Computing a festive occasion

The Greater London Council made a two-week effort this spring to bring life into computing and computing to the people.

With £30,000 worth of financial backing from the GLC, the fifth London Festival of Computing was ushered in just after Easter on a sunbright Covent Garden piazza. The Festival was done on a grander scale this year with robots as the initial attraction.

Members of the British Personal Robotics Manufacturers Group demonstrated their creations to some very intrigued passersby. Intergalactic Robots had more than half a dozen Zero robots on hand in a variety of capacities from finding its way around a maze to playing soccer. London-based Commotion (Computer Operated Motion) demonstrated a vision arm that reflects what it sees on the screen of the computer. And Valient showed its remote controlled Turtle working with the programming language Logo.

The next nine days were filled with further exhibitions, seminars and competitions culminating in the London Computer Fair at Central Hall, Westminster. Organisations who took part in the Festival included the GLC's Central Computer Services Division, the IT section of the Department of Industry, the Association of London Computer Clubs, Inter-Action Community Arts and Resources Charity and several local councils.

Generosity

Not all at Commodore UK is down. The company recently showed a generous side with a donation of £10,000 to the Save The Children Ethiopian Famine Relief Fund.

CBM had agreed late last year to donate a certain amount to the fund for every guarantee card returned by owners during the Christmas sales period (about one month). Commodore also was trying to encourage more new owners to send in their cards since estimates are that only about 10 per cent of all buyers do so.

In its usual closed-mouthed manner, the company refuses to disclose how much was donated for each guarantee card turned in with the reason that it would reveal sales figures, though not entirely since so few owners send in their cards in the first place.

Machines' future eyed

The universally popular 64 may be relegated to the VIC 20's current position by Commodore when the market is hit by the full force of the new C128, a machine that simulates the 64 and makes it better.

Undoubtedly, the tenacity of 64 owners will be reminiscent of VIC owners who have supported a market, small as it is, for VIC software despite the fact that Commodore stopped producing the machines last year. Whether the company will actually go to that extreme with the 64 is doubtful, at first at least, but the 128's three modes will make it so much more versatile and its software compatibility with the 64 makes it all that more attractive as an upgrade for 64 owners, forcing the latter to take a back seat.

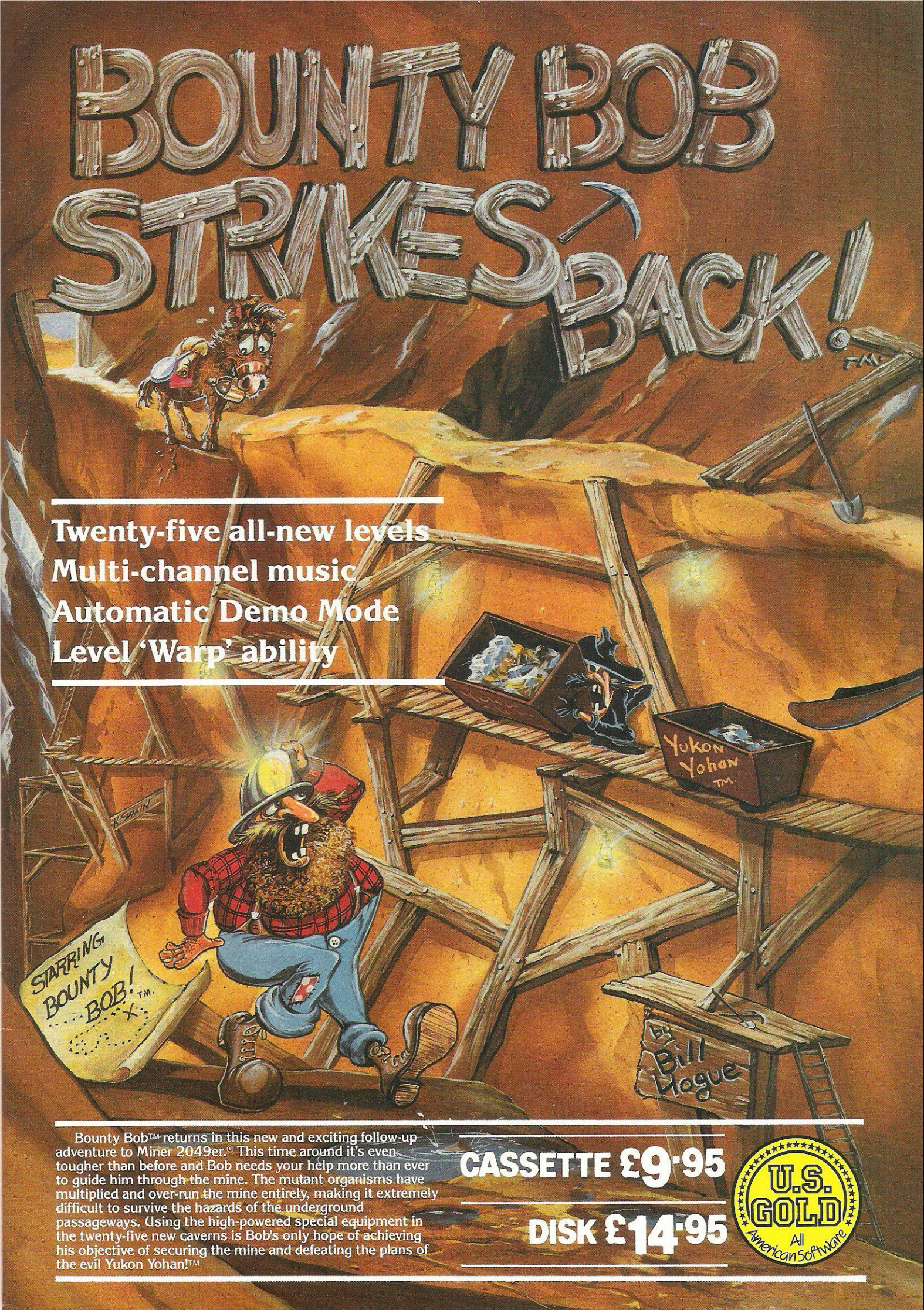
Meanwhile, the 64 is easing into price cuts by some of the major high street retailers, in some cases being reduced by £50. Currys in Hammersmith-London is selling it for £149.99 or will match anybody else's price if lower. That's down from a regular price of £199.00, the standard retail cost advertised in most shops until recently with the exception of Dixons' £149.99.

None of these price cuts match those on the C16 and Plus/4, a matter of some frustration at Commodore which still insists the machines deserve greater support. Designed to retail for £129.99, prices in many shops have plummeted to around £60 and £70.

"It represents a premature action on the part of the dealers," Commodore UK's Rae Potter said. "There is no support — and I would repeat, no support — for that price decrease from us. They took it into their own hands to reduce the price."

Such cuts usually signal a general pessimism about the long-term success of the machine. Although the C16 is getting a fair amount of software, particularly games, most is simply a rehash of 64 material. Software houses don't seem to want to invest precious time and money in producing original material.

CCI


BOUNTY BOB STRIKES BACK!
TM.
Twenty-five all-new levels
Multi-channel music
Automatic Demo Mode
Level 'Warp' ability
YUKON YOHAN TM.
STARRING BOUNTY BOB! TM.
by Bill Hogue
Bounty Bob™ returns in this new and exciting follow-up adventure to Miner 2049er.® This time around it's even tougher than before and Bob needs your help more than ever to guide him through the mine. The mutant organisms have multiplied and over-run the mine entirely, making it extremely difficult to survive the hazards of the underground passageways. Using the high-powered special equipment in the twenty-five new caverns is Bob's only hope of achieving his objective of securing the mine and defeating the plans of the evil Yukon Yohan!™
CASSETTE £9·95
DISK £14·95
U.S. GOLD
All American Software

Hithere

You've brought a computer into your home, but is it really a part of it? Does it really fit in as comfortably as the sofa or the fridge?

For most people, the answer to both these questions is no. Some experts say if the home computer is to survive as such, that will have to change in the very near future. If the change has started at all in the UK, it is going slowly, conservatively. Producers are more likely to take a chance at "frivolous" programs like slimming or astrology than delve into the murky waters of home account keeping, menu recording and burglar alarm control.

That's not to say slimming programs are useless. On the contrary, some of the quality software already on the market can be quite a help with dieting, exercising and all that goes with it. Examples are Longman Software's Successful Slimming and The Joffe Plan from Mirrorsoft. And many people are very interested in astrological signs and keeping track of star charts for themselves, friends and celebrities. Blandford Press answered the call with Prediction Birthday File that accompanies a book on the subject. Longman's Zodiac Master calculates your daily horoscope among other functions.

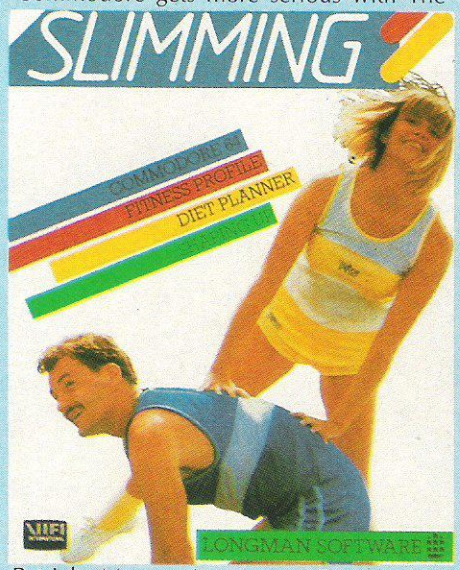
Here is where the computer becomes valuable, actually doing things faster than you can yourself. In Zodiac Master, the machine uses scientific formulae to calculate planetary positions and match them with your own astrological profile. The software part of Prediction Birthday File works more as an information storage and retrieval service but the construction of a birth chart is left up to you and the book. Mirrorsoft's Know Your Own Psi-Q interprets information you feed it to determine whether you have potential for psychic powers.

That's what the computer is for, after all. If it doesn't make life easier what good is it? Software designers have the challenge (or chore, depending on how they look at it) of making it worth your while to flip the switch on the computer, put the disk or cassette in, wait for it to load and do whatever's required to get the program off the ground and useful. It's a lot of trouble for information you could just look up in a book. But if the computer can give something more, ah there's the key.

"More and more companies will be looking at that side of things, having found that they can't sell games," says a spokesman for Audiogenic, a UK company traditionally focusing on games and small business software. "It's another thing trying to educate people to use their computers at home.

"We think there is a market out there for practical uses of the computer in a friendly way with minimal hassle."

Well, slimming and charting broke the ice so now there are a few more offerings. Commodore gets more serious with The



Patrick Moore Astronomy Program, a package of astronomical, rather than astrological, information and a quiz that borders on the educational category.

One of the more interesting and potentially useful programs is Plan and Design Your Garden, again from Blandford. It comes in two parts, one for designing your garden plot on screen and the other to offer advice on what you should be doing at any one time of the year to help your garden grow.

"It's a Catch-22 situation"

Then there are those crucial days of the year when you're searching the shops for just the right greeting card for your wife's birthday or your great uncle's anniversary and it just isn't there. Oh, you could settle for something neutral (and probably dull). Or you could turn to your computer. Broderbund Software, an American company whose programs are distributed in the UK by Ariolasoft, does The Print Shop for your own cards, letterheads, signs and banners (for your great uncle's anniversary party). If you want to cheat and send those obligatory once-a-year letters before Christmas and the late-anyway thank-you notes en masse, you can always try Quadrillion from Bubble Bus, a combination of word processor, poster printer, scrolling advertiser and (ha ha) label printer.

Bubble Bus' Ann Lovejoy says the company has received a tremendous response and has sold about 2,000 copies of Quadrillion and 12-15,000 copies of Quadrillion's four parts sold separately. Many of those, particularly in the case of Quadrillion, have been sold by mail order. There's the catch. You're unlikely to find much of this type of software stocked in your local computer shop or software retailer because they and their suppliers — distributors — are reluctant to take a risk with true home software, which is still very much in the "grower" stage.

It's a Catch-22 situation; distributors don't want to take the programs unless they're successful, but they stand less chance of success unless they get onto the mass market through the distributors. So for now it is mainly smaller companies — who don't necessarily demand high-volume sales — who dabble in home applications.

Among the rare big birds is Commodore. Rae Potter of the UK software marketing department says, "The market certainly is there, but nobody does well in sales.

"I think people out there right now find it difficult to recognise what is available."

Commodore offers a few home use packages. Money Manager handles personal finances like budget keeping, mortgage records and hire-purchase repayments. Galaxy Software does Personal Bank Manager for similar purposes.

But both of these packages are basically conversions of business software to a more simplified form and Potter predicts future offerings will be more specifically tailored to the home market. "Our business software sort of sits uneasily between the home and business markets."

Home dedicated packages have found better acceptance in the American marketplace than in Britain, but the UK can take advantage of the rather slow progress there to make advances here.

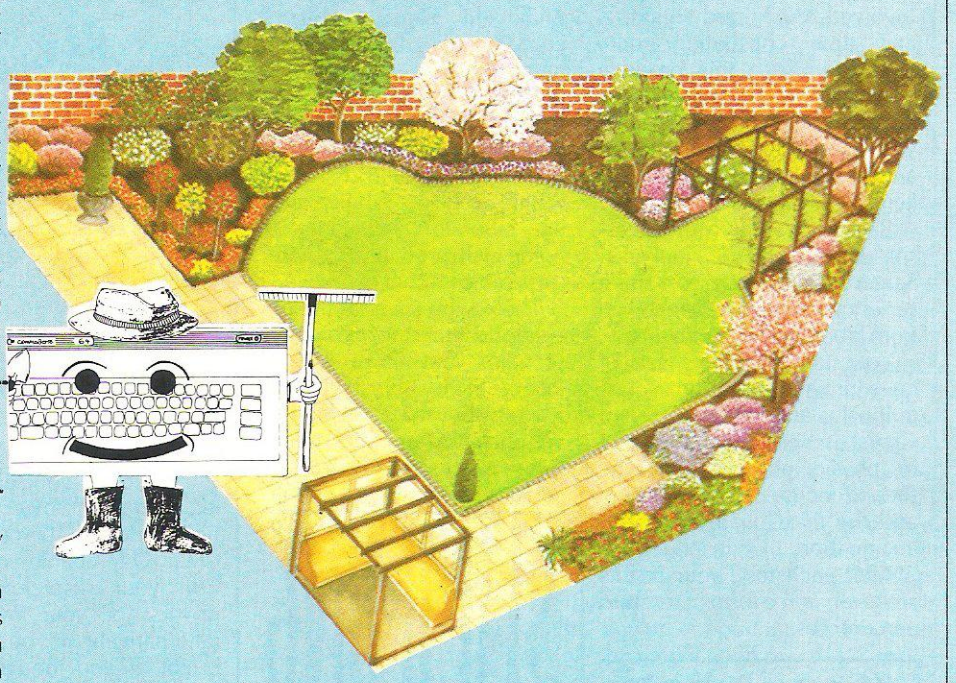
"There are a hell of a lot more companies over there trying to do that sort of thing," says Audiogenic. "But then the

Introducing the 64 as your personal home help. Viola Gienger discovers how your computer can help you around the home in all sorts of interesting ways

American computer user doesn't have as much of the games mentality as over here."

Despite that, recent enquiries in the US by Audiogenic about a robotic arm that could be interfaced to a computer have met little response. The primary use for such a tool likely would be teaching but it could also be used just for entertainment with games and such.

Basic home security is important to most people and the Commodore can even help in that capacity. Havant-based Micro Security sells a do-it-yourself kit of inter-



"64 takes the role of watchdog"

face control unit, software and security components for £99 for the 64 and VIC 20. The computer controls the burglar alarm system and other domestic appliances such as lights and radios. Since the alarm system probably would only be on when you're away, there's no worry about tying up the computer and, anyway, keeping it on is healthier for the machine than switching it on and off.

Mentality and bank accounts aside, Commodore UK does Know Your Own IQ and Know Your Child's IQ (for children 5-11), programs that do what they say through tests of behaviour and intelligence.

Or you can take your Commodore to the kitchen, set it next to the fridge and cooker and use programs like the Robert Carrier Menu Planner (64 and VIC 20) that takes the names of the famous chef. (CBM is fond of putting famous names on its programs.) RAD Systems of London does Recipe-Book 64 for keeping recipes on file and comes with European, Scandanavian and Indian cuisine files. No more greasy fingers on the cookery book or trying every odd utensil you have to keep it propped open while you play master chef.

Unfortunately, a computer can't yet give you the pretty pictures or flip-the-page organisaiton of cookery books. But it may be useful for those times when you're frantically searching for something edible to do with a can of tomatoes, some leftover leeks and a teaspoon of salt. (Don't ask me!)

On a totally different level, how about using the computer for home medicine. Doctors already use Commodores in their offices for more than administrative work, specifically in hypnosis, diagnosis and psychological analysis. I'm still waiting for a home program that stores all the best information from medical books and the professionals to help you tentatively diagnose an illness by simply entering a few facts. House calls are becoming more and more a rarity, after all.

Meanwhile, however, you have The Living Body. It's a package of software and colour booklet that teaches in graphic detail the workings of the human body from standard hygiene to the effects of cancer. Martech based this product on the book by Karl Sabbagh and the renowned Professor Christiaan Barnard was consultant for both. It's also a television series for Channel Four.

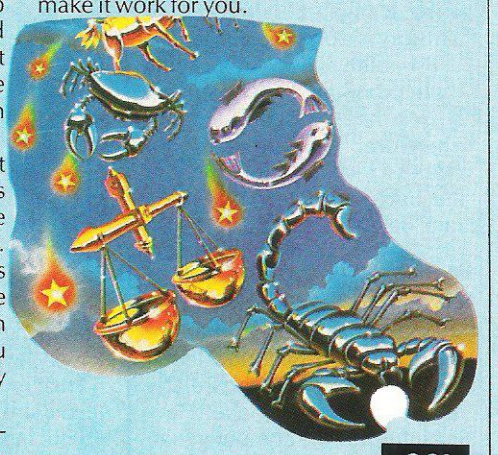
For those itching to be a BBC Mastermind but who just don't know how to begin preparing, Mirrorsoft and Commodore offer Mastermind programs with Commodore's version having eight follow-up programs on general knowledge, wine and food, music and more. If that seems a bit too much to handle Ask The Family may be more along your line, once again based on a television quiz show.

If you're still thinking of giving your great uncle an anniversary party, Llamasoft's Psychedelia (for the 64 and C16) could be really "hoopy," as Jeff Minter would say. It's a light synthesiser that creates all sorts of wild, wonderful designs when you move the joystick. Minter suggests it be used in the dark or at least subdued light, and you can save any of your own designs to play back later (at the party).

The more memory the better the package, and there will be much more sophisticated software for the Commodore 128 when it comes out later this year. Projected offerings include home design packages and a system for home management involving more than straight finances.

The overall future of home applications software depends heavily on two factors. Firstly, the average consumer will have to realise (or be convinced) that the computer is a viable, realistic way to approach home-oriented problems. Secondly, software companies will have to come up with packages that truly solve those problems.

Rae Potter says anything that can be done in literary form likely won't work on the computer because that extra dimension would only complicate the task. So the mission is to harness the computer's "intelligence" and unique capabilities to make it work for you.



CCI

KNOW YOUR OWN PSI-Q!

In the past, determining the existence of physic abilities has involved much card shuffling, and time consuming score checking. With this program from Mirrorsoft's Home Discovery series, you can discover you own abilities with speed and accuracy at the touch of a key.

Based on research by Professor Hans Eysenck and Carl Sargent, the program contains a series of tests and games drived from laboratory experiments.

You start with three sets of questionnaires. The first (mysteriously entitled Sheep and Goats!), investigates your belief in physic phenomenon; the second focuses on personality; and the third on mystery and imagination.

After each test, your results are given in the form of text and percentages.

"Games indicate physic ability"

The fun starts with a series of games — all testing your physic abilities: Guess the (card) suit, Guess the (card) colour, Hunt the Psi-Psub, and Find the Face. These are all fun to play and tell you whether your results are pure guesswork or indicative of physic ability, be it clairvoyance or precognition.

Long term Psi-testing enables you to monitor your progress over a period of time. Apparently psi-ability improves with practice. (Or is this a crafty way of avoiding the argument that once you used the program once, it's worthless?) You keep a history file on tape or disk.

Psi-ability is supposedly more pronounced if the subject is in a relaxed state of mind. Therefore, the program includes a relaxation routine. You are asked to enter your pulse rate before being treated to a display of swirling graphics. The graphics vary according to the pulse rate entered and do seem to relax you. I must confess to being a little puzzled at some of the results, particularly to the first questionnaire. Having informed the computer that, yes I did believe and had also had physic experiences myself, I was informed "You really can't decide what to believe". I think this was because I couldn't actually confess to having witnessed pyschokinetics or faith healing!

Many of us are intrigued by the powers of the unknown and a program which takes the testing of physic ability out of the laboratory and into the home will probably intrigue a surprising number of people.

Those who sneer at the physic world wouldn't consider this program, but those with an interest in the subject will find it a worthy buy for £9.95.

Contact: Mirrorsoft, Holborn Circus, London EC1. Tel: 01-350 0246.

SLIMMING

Fat is beautiful. That's one of the more recent messages in an age where men and women of all ages are concerned with their weight. But still there are thousands who constantly diet in the quest for 'the perfect figure'.

If you do seriously want to lose weight – and actually need to – it has to be done sensibly. For those who can't face the dreaded Weight Watchers sessions, but are looking for guidance, the slimming computer programs may go some way towards helping you.

We looked at two – Mirrorsoft's The Joffe Plan, designed by Professor Justin Joffe, and Longman's Successful Slimming which was prepared with the aid of slimming author Arline Usden.

Both take different approaches to goal of losing weight. The Joffe Plan is a 'no diet' program. Enter your current and target weights and it will set a plan to fit your lifestyle. The idea is that your food intake is balanced by your activity levels.

This is the program if you need a strong hand behind you. If you lapse you are given a 'telling off', with different penalties set. Regular checks should be made and your progress is marked by 'traffic light' zones – red being the worst zone to be in.

While the Joffe Plan is credited by Mirrorsoft as being the way to lose weight without dieting and exhausting exercise, Longman combine dieting and exercise in Successful Slimming. The program contains three parts: Fitness Profile, to determine how fit you are and suggesting ways of improvement; Diet Planner, to discover if your diet is healthy and find a lower-calorie balanced menu; and Shaping Up, which is a collection of varying degrees of exercise illustrated on-screen.

The concept of your own personal computerised guide to slimming is interesting and for some may work. Both programs

KNOW YOUR OWN IQ?

Consider yourself above average? Anger Productions released Discover Your Own IQ to enable you to confirm your suspicions in the privacy of your own home (alternatively if you're not as bright as you thought no-one else need see the results!)

Available on cassette, the price of just £5.45 suggests — as indeed the company admits — that results should ideally be used for amusement rather than taken as gospel.

The program consists of two tests designed for those aged 14 and above — choose just one, or attempt both. These include typical IQ questions along the lines of 'enter the next number in the sequence'. There are 33 questions in each test which get progressively harder. A time limit of 25 minutes applies to both tests. At the top right of the screen the time is shown along with your current score.

You are advised not to guess at answers if you have just the vaguest logical solution and to check each entry before pressing return.

On completing the test, the computer calculates your result and reveals your IQ (intelligence quotient) between 90 and 140 — the average result is 100. It then lists a selection of jobs suited to your intelligence level.

Overall, this is a fun program. It doesn't offer any more than IQ tests printed in magazines or books, although it does ensure that you stick to the set time limit. No chance here of spending days or weeks puzzling over that eluding answer!

Some of the questions included do not test your logic capabilities, but also general knowledge. For example one lists five anagrams and your task is to find the one which is not an ocean. Another question that raised eyebrows is 'what word describes both turf and drug' — the answer, of course, being grass!

Incidentally, I don't know what the IQ of the author of this program is, but on at least one occasion 'anagram' was spelt 'anigram'!

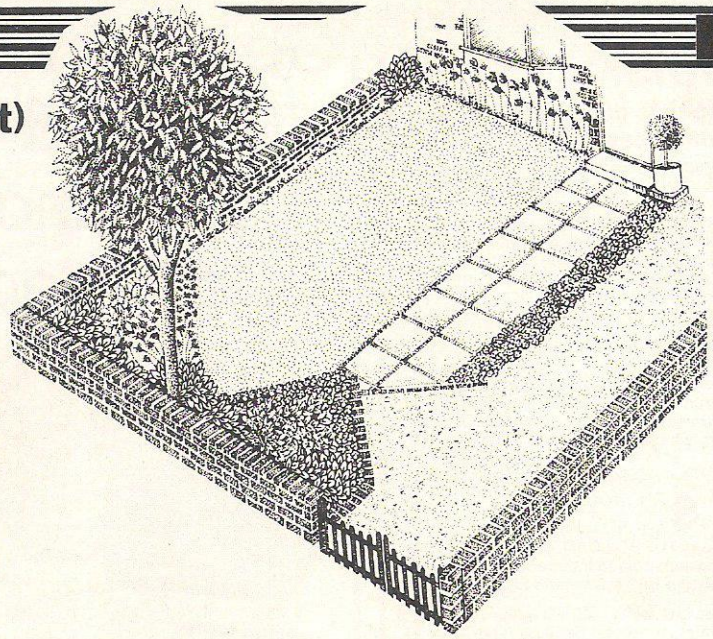
Contact: Anger Productions, 14 The Oval, Broxbourne, Hertfordshire. Tel: 0992 461156.

SLIMMING (cont)

require you to set up your own progress file on cassette to monitor results. They do advise against unhealthy attempts at weight loss, as indeed a doctor can only advise you. It is really up to you to be sensible.

If you have some degree of will-power, 'computer slimming' is a fun way to lose weight. And think of all those calories you will lose bashing away at the keyboard!

Contact: Mirrorsoft, Holborn Circus, London EC1. Tel: 01-822 3913. Longman, Longman House, Burnt Mill, Harlow, Essex. Tel: 0279 26721.



GARDENING

Your home computer may not be sturdy enough to withstand the elements, but you can still use it for planting your garden because planning is an important part of it.

That's the role of Blandford's program Plan And Design Your Garden. The package of cassette and book focuses primarily on cosmetics, how to design a garden with flowers, vegetables, rocks, grass, etc for the most aesthetic effect.

The book is an illustrated guide to the intricacies of what sort of plants to use, where to put them, how to arrange the garden and what sort of decoration to use, eg water, paths, fences, furniture. It includes charts of plants within specific categories such as hedges, shrubs, trees and ground-cover flowers, though there is no chart for vegetables.

The software is in two parts: a very rudimentary graphics section that lets you form a design on the screen with specific dimensions and a gardener's diary that the user completes in a similar way to a database, with information on tasks to be done throughout the year. The inconvenience here is that you must first load the design portion to access the diary, though one has nothing to do with the other.

"A very basic package"

Overall, the package is very basic. Starting with the software, the limitations of the graphics are substantial. The main menu gives the options of starting anew, saving to disk, loading from disk, editing what is currently on screen, computing the area of your plot or "quit program." It is confusing that the latter takes you into the diary. The wording suggests shutting up shop altogether. But nowhere is this explained since all instructions are on screen, none written.

Once you enter the dimensions coverted into units (maximum is a 38 by 21 rectangle), the shape you've selected is filled in with green. From there you start in the top left-hand "unit" and choose what to put in that spot. You move using the cursor keys and choose to fill the spaces with water, flowers, vegetables, buildings and paths or just leave it grass with each option designated by a letter on the keyboard. Unfortunately those are your only choices and any design is done in squared-off fashion, forbidding creative rounded beds or different textures of paths, lights, shrubbery and dozens of other things that one has the option to do with a garden, large or small.

The fact that this program does not reflect that is unfortunate, for the beauty of most gardens lies in creative flair and deliberate randomness. It is ironic that the accompanying book does include many of these suggestions. But perhaps not since the relationship between the two is weak.

Moving across the keyboard is not particularly easy either since the 64's up and left cursor keys require the "shift" used with them, but you can't enter a design letter with the "shift" key depressed.

A help function does not give more than a brief definition of the meaning of code letters, eg, v for vegetables, w for water and so forth, as if that would really be a problem. The claim on the package that "The program advises on the range of plants and flowers suitable for different purposes and locations" is not borne out in the material. And each time you return to your design, you must wait for it to draw itself again.

I don't wholeheartedly reject the package since the book gives important advice on cosmetics and practical considerations such as plant requirements, etc, and the software database can be valuable as a store of information pertinent to your particular case. As for the design portion of the software, the main use would be to give you some conception of space and content. However, at a price of £14.95 for the package, you could do much better with a stack of paper and an inexpensive pack of crayons and then by the book for its retail price of £3.95.

Contact: Blandford Press, Link House, West Street, Poole, Dorset. Tel: 0202 671171.

PSYCHEDELIA

"There is no frustration . . . there is no killing . . . only pleasure!"

No, unfortunately we haven't reached Utopia — these are the words of Jeff Minter describing his latest offering Psychedelia, a light synthesiser.

The concept of the program is that you generate your own lightshow to favourite records. In Minter's words: "Turn off the lights. Put on whatever music you like to freak out to. Pick up the joystick and do it with feeling!"

The program has 16 presets, stored lightsynth parameters giving different effects. Eight are permanent and the other eight can be determined by the user.

You can choose from patterns which are fast or slow, swirling or pulsating. (No prizes for guessing that one features Llamas!) Symmetry and pattern elements can be changed using specified keys. The shape of pixels can be changed and the line mode switched on and off.

When you have the pattern element of your choice, use a joystick to create the light fantastic.

The list of various advanced commands is lengthy, but if you want to go past elementary levels you have the option to create extremely complex results.

Of course, you don't have to be glued to your joystick whenever you want to 'freak out'. There is the facility to record and playback your creations. Up to five minutes of joystick movement can be input.

Psychedelia is something rather different and if you do have an interest in music, it's certainly worth looking at. Versions are available, on cassette, for the 64 (£7.50), C16 and VIC 20 (both £6).

To end with another quote from its creator: "Blow minds with it. Freak out your granny!"

Contact: Llamasoft, 49 Mount Pleasant, Tadley, Hants. Tel: 07536 4478.

CCI

COMMODORE 64 COMMODORE 64

MEGA-DISK

Transfer your fast loading tapes to disk – and fast load them as well! MEGA-DISK comprises:

1. A suite of 26 routines which will transfer a wide variety of multipart/ flashingscreen/picture loaders including some VERY popular chart toppers. No user knowledge required.
2. A disk fast loading system equal in performance to any software competitor. Just add this short program to each disk and most programs will load at FOUR times the normal rate – without having to load the utility separately.
3. A multi-option FAST disk formatter, and a disk to disk transfer utility for single files of any length. Disk £11.00.

DISKUS I

The most efficient tape to disk transfer utility yet devised. For virtually all standard rate programs. Multipart, autorun and even headerless files are all catered for. All transfer is automatic. No user knowledge required. Diskus 1 has special provision for program types which NO other utility can handle. Cassette £9.50. Disk £11.00.

R.B.S.

Convert you slow loading cassette games to TURBO LOAD. Multipart and auto run programs are handled with ease. Programs reload independently. No user knowledge required. This is demonstrably the BEST. Cassette £7.50.

HYPERSAVE 64. Programmers fast loader. £7.50 (tape)
PRO-SPRITE. Sprite library/editor/animator. £7.50 (tape)

DISCOUNTS: DISKUS 1 + MEGADISK (disk) £19.00. Any two tapes programs on one tape at £9.99. ENTIRE PACK (every program in this ad) just £25.00 (disk only).

All programs for Commodore 64. Cheque/P.O. or S.A.E. to:

DOSOFT (DEPT Y)
2 OAKMOOR AVE.
BLACKPOOL FY2 OEE

£17.95 INC VAT, POST & PACKING FOR A LIMITED PERIOD!
PACE!
WANT TO LOSE WEIGHT? ...PACE IS THE ANSWER!
PRACTICAL! RECIPES FOR YOUR LIFESTYLE
PERSONAL! PACE USES YOUR COMPUTER TO DESIGN A DIET SUITED EXACTLY TO YOU!
COMPLETE! 2 CASSETTES PLUS A 200-RECIPE BOOK WITH UP-TO-THE-MINUTE HEALTH & SLIMMING FACTS
Please send me ____ copies of The PACE program at £17.95 each to run on Acorn BBC B ☐ Commodore 64 ☐
I enclose a cheque/PO for £ ____
payable to Practical Programs Ltd.
Name
Address
Telephone
CCI
Or order by telephoning 01-794 4033.
Money back guarantee. Allow 28 days for delivery.
Mail to: Practical Programs Ltd., 7 Downside Crescent, London NW3 2AN.
FAST PACE WEIGHT LOSS

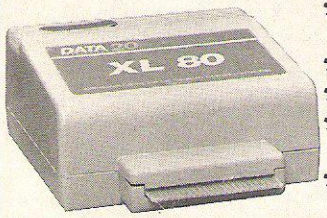
General Automation World Trade Enhance Your Commodore 64™

QUICK DATA DRIVE

Accelerate your COMMODORE 64™

* 15 Times faster than data cassette.
* Fully automatic operation
* High performance "quick operating system."
* Includes file management utility programme.

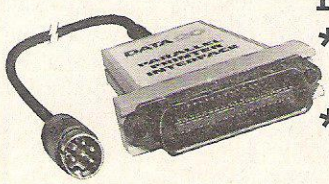
£89.95 inc. VAT



THE XL80

* High resolution 80 column display.
* Word processing software.
* Spread sheet software.
* Terminal emulator software.
* 80 column mode allowing full use of basic.

£134.95 inc. VAT



PARALLEL PRINTER INTERFACE

* Connects standard parallel printers to the COMMODORE 64™
* Translates the COMMODORE 64™ character set to ASC11.
* Passes through graphics characters.
* Does not require power hook-up from the printer, computer or any external source.

£59.95 inc. VAT

Contact your local dealer.
Dealer enquiries invited.

GA WORLD TRADE

Commodore 64™ is a trademark of Commodore International, Inc.

General Automation World Trade Europe Limited
Automation House, 45 Ledgers Road, Slough,
Berkshire SL1 2RQ, England. Tel: (0753) 76533. Telex: 847212.

Sixth International Commodore Show

The list of exhibitors and special events at the Sixth Annual Commodore Computer Show on 7th-9th June at London's Novotel Hotel was growing hourly at press time.

In addition to the ever-lengthening line of new Commodore computers that will be on display (ie, PC, C128, Amiga), several software companies are planning major blow-outs. Domark has just announced plans for launching a game that promises to be a big hit if for no other reason than the name of its main character — James Bond. Called A View To Kill, the game will be launched for the 64 during the Show and Domark will have on hand an appropriate stock of Bond paraphernalia along with some "Bond girls," models used in the background shots for film promotions.

Anirog has booked a large stand to focus mainly on hardware, including demonstrations of two new utilities — Super Sketch, a graphics tablet, and a synthesiser/voice recognition unit/music generator called Voicemaster.

Robot fanatics should have a load of good fun at the Intergalactic Robots (IGR) stand. If the London Festival of Computing was any indication of IGR's eagerness for first-hand demonstrations, it will have plenty of Zero robots on hand (and in yours) to play with to your heart's content.

Commodore's launch of International Basketball, which follows the highly successful International Football, will be highlighted by a computer basketball challenge. In the tradition of years past, Commodore UK will bring the winning team of its live action basketball tournament (shown during its run on Channel 4) to take on the person who wins a series of computer basketball contests at the Show. Commodore UK also will be introducing its third international sports game, International Tennis.

A computer games arcade will be the centre of attention for younger computer enthusiasts who can pit their computer skills against some of the latest and most challenging games available. Other events during the three days include celebrity appearances, computer challenge competitions, prize draws and a Music Maker orchestra.

On the serious (but definitely not boring) side, First Publishing will be showing several new items including a programming language training program for ADA. Dubbed by the company as "the programming language of the future," ADA was invented for use by the US Defense Department and takes the name of the world's first computer programmer, Countess Ada Lovelace. Up to now the ADA language has been restricted to use on mainframes because of the memory it takes up. First Publishing's version is the first for microcomputers.

First Publishing will also release a book on Artificial Intelligence written by a German professor and one focusing on how to use Computer Aided Design (CAD). Both books contain sample listings.

A separate business section will show business users the most recent developments in both software and hardware.

The Novotel is in Hammersmith, southwest London. Doors to the exhibition open at 10am and close at 6pm Friday and Saturday and are open 10am-5pm Sunday. Admission is £2 for adults and £1.50 for children. A group of two adults and two children will qualify for a special family ticket at a saving.

Here is a full list of exhibitors as of press time:

Alligata
Anagram
Anirog
Apstor
Audiogenic
Bubble Bus
Computer Bookshop
Domark
Duckworth Publishers
First Publishing
General Automation
Hago
Handic
Harbour Software
Holt Saunders
Intergalactic Robots
Island Logic
JCL
Llamasoft
Logic Sales
Microdeal
Mikro-Gen
Mills Associates
Peaksoft
Ram Electronics
Siel
Step-One
Stonechip
Supersoft
Tek Services
Tirith
Viza Software
Zero Electronics

PC: What you'll be seeing at the show

Now that the Commodore PC has been officially launched to dealers, press and public, here are some of the very basic things you should know about what, how, when and where.

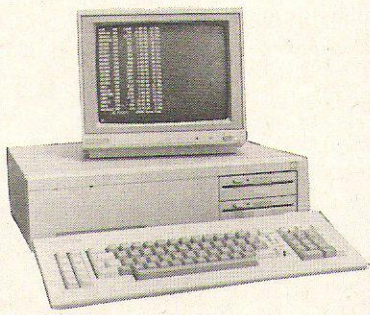
The machine will be on display at the Commodore Show in June but should already be in the hands of major dealers now, according to CBM. What "major" means is debatable, but they will be called "Commodore Business Centres" and will receive their equipment from five distributors: Norbain Micro Ltd, Northamber PLC, Pete & Pam (P&P) Micro Distributors Ltd, STC Electronic Services and Westwood Distributors Ltd. Software will come from P&P and Software Ltd, but all IBM-PC software tried so far has been completely compatible (at least two hundred packages).

The dealer support package put together by CBM for the PC includes an extended three-year warranty called Commodore PC Cover Plus, leasing arrangements through the newly created Micro Leasing division of United Financial Services and financial support through Boston Financial Company. After sale support will come from Regional Service Centres, but if service can't be handled there, a substitute machine will be provided.

The 16-bit machine is a whole new breed for Commodore, which has built two version, the PC 10 dual floppy disk and PC 20 hard disk. The PC 10 retails for £1,675 and the PC 20 for £2,795, believed to be the least expensive hard disk personal computer on the market.

Obviously, shopping around is as essential in buying a new computer as in buying a car (perhaps more so). If you're in no hurry, it might be worthwhile to wait until your favourite dealer gets the scoop on Commodore's PC as it will take a while for everyone to become familiar with it.

Meanwhile, here are the technical specifications for the PC 10 and PC 20:



★ Intel 8088 16-bit processor (Optional Intel 8087 Floating Point processor available)
★ 4.77 MHz clock speed
★ 256K RAM main memory, expandable to 640K. Video 32K RAM. 8K or 16K ROM
★ 12-inch monochrome CRT display
★ Detachable 84-key keyboard, includes 10 function keys
★ Interfaces: parallel (Centronic); serial (RS232); RGBI
★ Expansion:
PC 10; five expansion slots
PC 20; four expansion slots
Both models accept standard IBM-type boards
★ Storage:
PC 10; dual, double-sided 360K floppy-disks
PC 20; single, double-sided 360K floppy disk and one 10 Mbyte hard disk
★ Operates under MS/DOS version 2.11
★ Utilises GW BASIC language
★ All models are provided with:
GW BASIC Manual and disk
MS/DOS Manual and version 2.11 disk
A guide to operations
Reference card
A 'describe' utility disk

This month your letters are answered by Rae West. Rae is the author of three large reference books on Commodore computers; the latest is Programming the Commodore 64, following Programming the VIC and Programming the PET?CBM. All are published in the UK by Level Ltd. Rae is also published in the USA by Compute! Books.

Dear Rae,
How can I conveniently display ROM characters on the hi-res graphics screen of the 64? One way is to download the 64 character set. But is there not some pointer within the operating system which retains the usual POKE and PRINT commands?

R Collins
Dorking

Unfortunately, PRINT and POKE cannot be used in bitmap mode as you'd use them ordinarily. The reason is that PRINT and POKE each deal in a single byte value, which is put into screen memory; the VIC-II chip treats this as an offset from the start of the character generator area, and automatically performs all the calculations needed to convert this into the equivalent 8 byts of definition. In bitmap mode this is no longer the case. To make PRINT and POKE work, these commands would have to be intercepted, and additional machine language inserted to convert individual byte values into their corresponding 8 bytes.

Dear Rae,
Please could you help me decide which disk drive to purchase for the 64. I have seen many in the shops but do not know which one to buy.

A Malhorra
Southampton

There are many disk drives on the market, but Commodore's unique serial bus (with the round socket) plus the fact that the disk drive needs a lot of ROM to operate ensure that virtually all 64 disk users have a 1541.

Dear Rae,
I am writing a program that contains a large amount of numeric data, both to be input, and printed to the screen. To avoid confusion between the zero symbol and the numeral 8, I have used the enclosed program, which leaves me with about 30K. Is it possible to leave more memory available, and, without using machine language, can the program be made to operate quicker?

M Robinson

Your program moves the character definitions to $8000, and starts the screen at $8800. You then redefine the zero characters in lower-case mode and in graphics mode by poking in 16 bytes. This leaves about 8K less than is usually available for BASIC.

You can do better by moving the character definitions and screen further up in memory, and leaving RAM free up to $CC00. POKE 648,204: POKE 53272,57: POKE 56576, PEEK (56576) AND 252 with a loop to move 4096 bytes from 53248-57343 to 57344 upwards will do this. (Remember to POKE 1 and 56334 to make the characters visible to PEEK).

There's no way, using pure BASIC, to significantly speed up the loop. (There is a memory move routine in ROM at $B3BF, but this can't be used from BASIC). The answer is to use an ML loop.

Dear Rae,
We have great difficulty in trying to record a personal message on a blank VIC-20 cassette. We feel sure this must be very simple really, but it baffles us. Yours in dispair

D Downes
Clapton

If I've understood you, the easiest method is to write a simple program using PRINT statements. 10 PRINT "HELLO" is a very simple example. When loaded and run, such a program will print out all the messages in quotes.

If the message is too long for one screen, separate it into shorter screenfuls, and include a line like 1000 GET X$: IF X$< > " " GOTO 1000 with instructions to press the spacebar to continue.

Dear Rae,
I have a 64 connected to a SpectaVision for collecting data through the RS232 interface. This works well using any of the 64's baud rates. It would be nice to store large quantities of data on disk, but as soon as I PRINT # to the disk file I get garbage. Can you help?

L Dalgaard
Denmark

What you have found out about RS232 communications and disk drives is actually quite well known. It isn't possible to read from RS232 and write to disk at the same time.

This is because the 64's RS232 is controlled by NMIs (Non-Maskable Interrupts). These override other processing to provide accurate timing during data transfer. However, the disk drive's timing is upset if this happens. The solution is to read data through the RS232, store it in memory — possibly from $C000 on — then close the RS232 channel and write to disk, from memory, while the channel is closed. After this, RS232 can be reopened.

It's possible to save a lot of data to disk like this, but if there's too much to fit into memory at any one time I'm afraid there's no solution.

Dear Rae,
My system comprises a 64 with a 1541 disk and a Shinwa CP80 printer. I use Easyscript for wordprocessing and print out final copy on a Silver Reed EX44 with a Centronics interface. I would like to start generating my own software but have been unable to get the system to print out any hard copy from BASIC. I was given an Audiogenic software Centronics program but this does not do the trick; I have been informed that I need to buy a special Audiogenics lead which seems an unnecessary expense when the solution is obviously possible in software. How do I go about generating software to use the interface lead I already have?

J Potter
Windsor

Most Centronics interfaces for the 64 connect to the user port, rather than the serial port, since it has 8 tracks readily available for a parallel interface. I presume your printer is connected to this port. There's no standard way to connect a Centronics printer to the user port — the programmer is free to define many of the pins as he thinks fit, and this will work provided the interface cable matches. In your case, the Audiogenic software must be designed for a different layout of connections.

Easyscript isn't easily accessible to disassemble, and Precision Software may not supply their driver routines, so unless you have some way to identify which lines are doing what your easiest course may well be to get Audiogenic's cable.

Dear Rae,
I erased by accident the first few inches of a program tape. Consequently I can't load the program anymore. Is there still a possibility to recover the program?

J Boelart
Brussels

If you listen to a 64 program tape on audio equipment you'll hear a tone followed by the header, then a second tone followed by the main program. Position the tape after the header, then try.

POKE 828,1: POKE 829,1: POKE 830,8: POKE 831,0: POKE 832,20 then SYS 62820. (The value of the last POKE controls the amount of tape read — you may need a different value). This should load the program, without the header. An OLD command will recover the program fully; this is explained fully in my book on the 64.

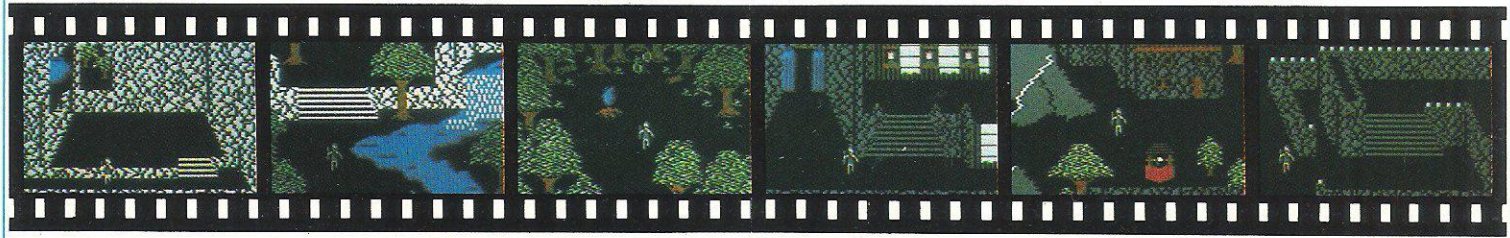
Do you have a computing problem, or advice to offer other readers? Write to us at:
Queries,
Commodore Computing International,
Finsbury Business Centre,
40 Bowling Green Lane,
London EC1R 0NE
Please do not send your SAE's as it is impossible to reply personally to every query.

DURELL SOFTWARE

SHADES

COMMODORE 64

A fully animated 3D adventure
for 1 to 4 players extending
over 64 colourful locations.
REQUIRES A JOYSTICK.
R.R.P. £8.95



DURELL sales dept.,
Castle Lodge, Castle Green, Taunton, Somerset, TA1 4AB

MINDBENDERS

Board games have come a long way over the centuries. Sue Pearce finds a variety of computer versions ranging from the traditional Draughts to the fantasy world of Archon

For centuries people have been sitting down to exercise the old grey matter over board games in their various guises.

They may vary in terms of approach and in levels of seriousness, but whether you are painstakingly deliberating over how to get out of stalemate, or debating whether it was Professor Plum whodunnit, all have one thing in common — they are mindbenders.

Before the days of television, families worldwide would spend many an evening gathered round the table to tax their brains over a favourite board game. Since then many of these games, with the exception of chess, have been relegated to the cupboard and only dusted off on occasions such as Christmas when the family spirit is revived.

"A new lease of life"

Until recently that is. Many board games have now been transferred to home computers and these games are now experiencing a new lease of life.

From chess to the latest board game to sweep the country — Trivial Persuits — these computer versions are true to their origins. Graphics vary from straightforward two-dimensional representations of the boards to realistic three-dimensional views. Sound is usually limited to the odd electronic beep as a movie is made.

One of the biggest advantages held by the computer versions is that you don't always need to have a human partner.

So, if you are longing for a game of Scrabble but can't find a partner — your computer will never refuse.

Alternatively, if you want to improve your game the computer is also a good option.

Chess is probably the most common board game to be put onto the home computer. With the 64 you can learn to play the game with Longman's First Moves or test your talents with Audiogenic's Grand Master (also available for the C16 and Plus/4). Other computer chess programs available for the 64 include Beyond's Mychess II, Superior's Chess, Colossus Chess 2.0 from CDS (soon to be followed by Colossus Chess 4.0).

"A hostile chess board"

The most recent chess program is a little different from your average game. Micro Classic have released The Chess Game. In addition to testing your chess strategy, an arcade element is offered. The chess board is hostile and the opposition is after your blood!

Other classic board games you can play on your computer include the classic game Draughts — a version is available from Superior Software. Games that are perhaps not as widely heard of, but equally popular among players include Kensington. Released by Leisure Genius, Kensington is a game of strategy and tactics. You have to construct shapes which beat the computer or your opponent as he tries to outsmart you on a grid of triangles, squares and hexagons.

Yantzee is a game seemingly fast gaining in popularity. Anger productions has a computer version for the 64. Another game with oriental origins, the object is to gain the highest score from a selection of dice, combining luck and skill.

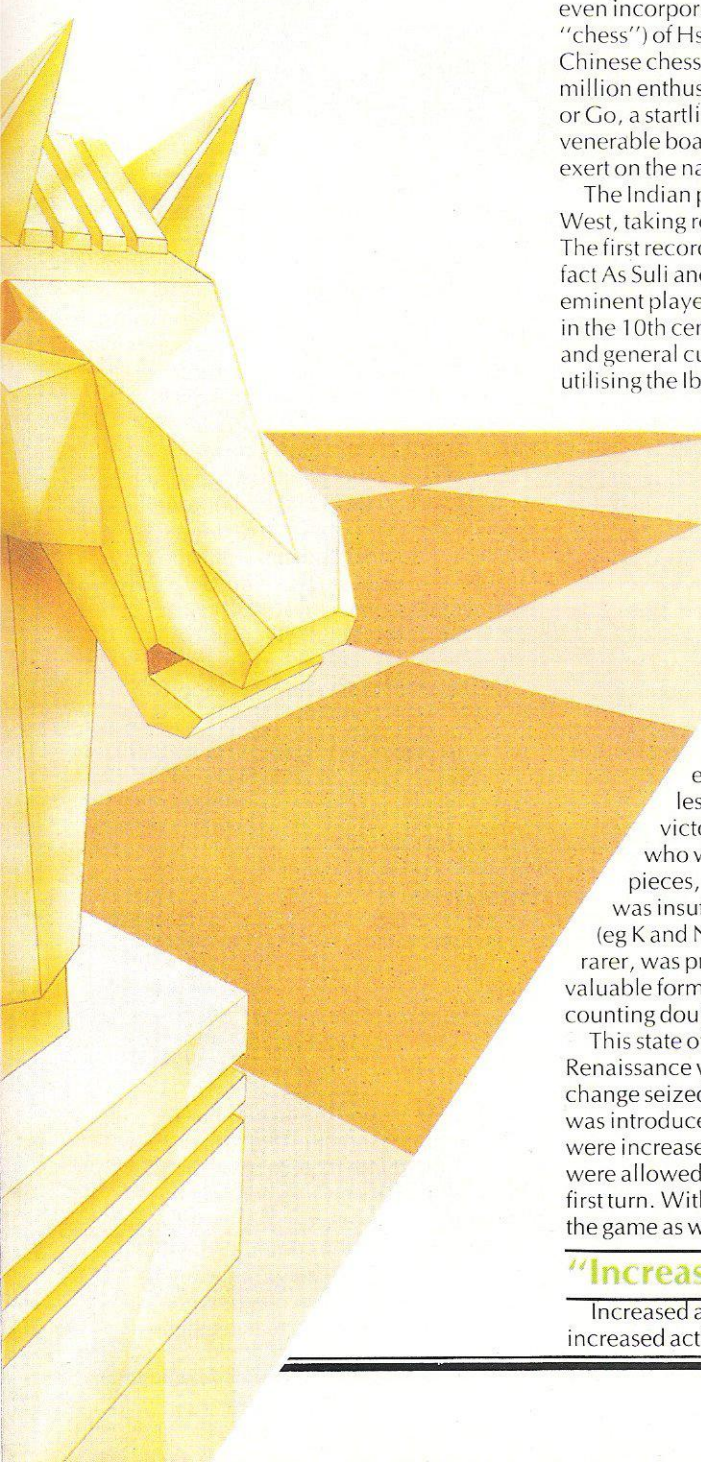
Kalah is claimed to be the oldest game in the world. It has apparently wasted more time in hot desert countries than any other persuit. Talent has produced a computer version of Kalah which is played on an on-screen board with two rows of shallow pits. There are six pits on each side of the board and two larger pits at each end called Kalahs. The small pits are filled with pebbles and the idea is to get more than half the stone in your own Kalah.

Microgo, from Edge Computers is the computer version of Go. Originating in the Far East 4,000 years ago, this is Japan's national board game. The rules are simpler than most board games, but your imagination is severely tested.

For a game with magical connotations, try Ariolasoft's Archon. Making use of troll, dragons and other 'slimy underlings', you must protect your empire.

BENDERS

Raymond Keene – International Chess Grandmaster and chess correspondent of the Spectator – traces the origins of chess and praises the modern day computer versions



Chess is thought to have been invented around the 6th century AD, probably in India, from where it spread Eastwards. It is now found there in the different versions of Thai chess, Chinese chess and Shogi (the Japanese version). The Chinese for Go (Wei Ch'i) even incorporates the Ch'i (signifying "chess") of Hsiang Ch'i, the term for Chinese chess proper. In Japan around 10 million enthusiasts play and follow Shogi or Go, a startling witness to the grip such venerable board games have come to exert on the national consciousness.

The Indian prototype also sped to the West, taking root initially with the Arabs. The first recorded Grandmasters were in fact As Suli and Al Lajlaj, the most eminent players of the Bagdad Caliphate in the 10th century AD. Through trade and general cultural contact, possibly utilising the Iberian Peninsula as springboard, chess then diffused throughout Europe. But it was still a muted version of the game we play today: the B and Q were vastly less powerful than their modern counterparts, so pawn promotion (for example) was a significantly less useful weapon. In fact, victory tended to go to the player who won all of his opponent's pieces, even if his remaining army was insufficient to deliver checkmate (eg K and N v K). Checkmate, being rarer, was prized as an especially valuable form of victory (sometimes counting double, if play was for stakes).

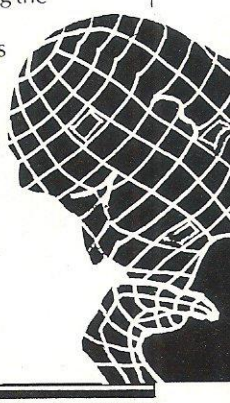
This state of affairs persisted until the Renaissance when a sudden and dramatic change seized the ancient game. Castling was introduced, the powers of Q and B were increased enormously and pawns were allowed to move two squares on their first turn. With insignificant changes, this is the game as we know it today.

"Increased activity"

Increased action on the board meant increased activity off it — the class of chess professional arose, players and writers such as El Greco, Paoli Boi, Philidor . . . Matches between acknowledged Masters became frequent. In 1851 the first international tournament was organised (at London) and in 1886 the first official World Championship match was held, between Steinitz and Zukertort. Quite how this sudden change came about is almost as much of a mystery as why the Dinosaurs died out so rapidly at the end of the Cretaceous Period. One thing is sure — the changes did nothing but good for the popularity of the game.

Today, there are 120 plus national federations affiliated to FIDE, the World Chess Federation, there are well in excess of five million registered players and many, many more who play socially, or know the moves, and the World Championship has been finally established as a biennial event. Furthermore, chess is regarded by the media as a significant activity. When the recent Karpov-Kasparov World Championship match was aborted in Moscow, quality media reaction included front page coverage with photos in the Herald Tribune, Guardian and Daily Telegraph, a Times Leader and a special BBC II programme devoted to the closure — and there was much, much more. It is difficult to believe that draughts, darts, backgammon or snooker could command this kind of mainline news attention.

Fascination with machine chess could be said to have started with Baron von Kempelen's mechanical "Turk" exhibited at Vienna in 1770. Of course, the "Turk" was a hoax and cunningly concealed a diminutive human player. In the following two centuries, in spite of 85 years activity by the Turk (with successive occupants) and academic experiment with main-frame computers, during the two decades after the Second World War, little progress was made in bringing genuine computerised chess to the general public. But when the breakthrough was eventually made, around 1977, it came on a variety of fronts: a wave of commercial machines dedicated solely to playing chess (of which Novag / Fidelity / Mephisto / SciSys are amongst the best known).



MINDBENDERS

In addition, a variety of different programs for all brands of home micro-computers, of which the Commodore "64" is amongst the most highly recommended. For 1400 years chess was played face to face between human opponents. How has it survived widespread transference to the computer console?

"An accessible opponent"

There are many advantages of having access to a computer which plays chess:
1) You play as many games with it as you like for however long a period — right through the night if you wish. There is no need to arrange social games with a friend, or trek down to the local club. The computer opponent is always accessible.
2) Nearly all programs will store games, so you can retrieve moves via the screen or printer, to see where you went wrong, or what you did correctly.
3) All programs have multiple levels, so if you start to win regularly on one level, it is always possible to upgrade to the next one. This progression is an excellent way of improving your own game.
4) As a social or club player, however strong you are, there will always be one top of the range program available that will give you a very good game. In fact, against the Super Constellation tournament version only Master strength players could be guaranteed a near 100% success rate and in "Blitz" (games with five minutes for each player) even Masters lose to the machines.
5) If you require practice with certain openings you can program the computer to repeat them again and again, it will not get bored.

All of these steps are what might be termed training or preparation for games with human opponents. For this, the computer can be invaluable, so long as you avoid the mistake of pulling the plug whenever you get into a difficult or inferior position. One needs experience in bad positions as well.

What about computers in official tournaments? Several progams have competed at this exalted level and with success. In the III Commonwealth Championship, London, February 1985, the Novag "Monster", defeated World Chess Federation rated Master, Stebbings, and then got International Master Danny King into great difficulties, before the machine went astray and lost. Next day, on the front page of the Guardian there appeared the headline: "King has Mastery over Monster" (!).

"Chess is not just a pastime"

My conclusion is that chess programs do nothing but good for the game. They encourage people to take up "social" chess who might never have thought of playing the game in a club, or joining the national federation. Remember — chess is not just a pleasant pastime, it is also training for the mind and statistics show conclusively that school children who play chess also perform well above average in their academic work. Furthermore, computers help to generate media and public interest in chess by competing on ever more equal terms with players of near Master strength in formal international tournaments.

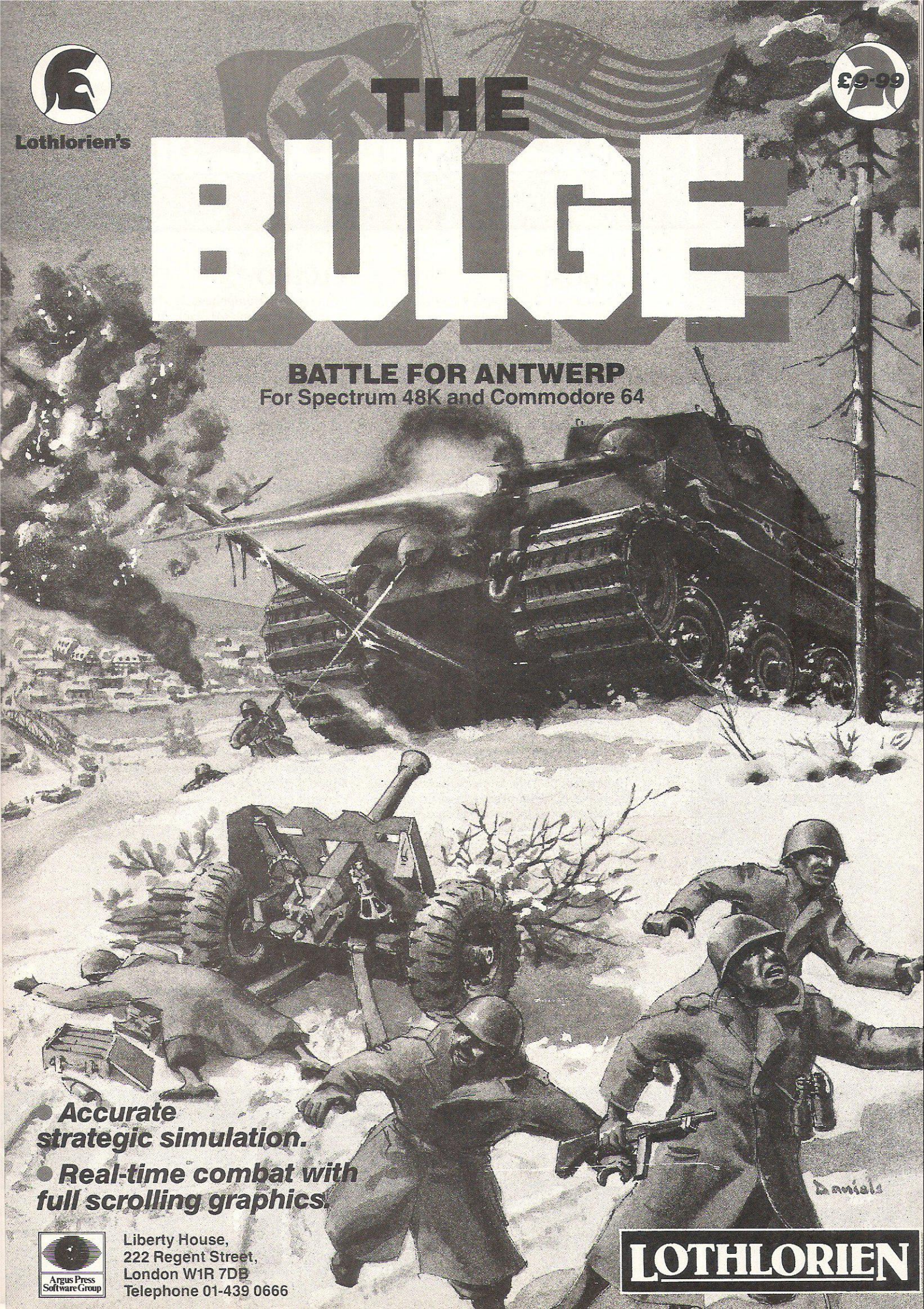
Now to my personal experience and investigations:

I tested three programs on the Commodore "64": First Moves (Longman Software); Collossus 2.0 by Martin Bryant for CDS Micro Systems and Mychess II by David Kittinger (DATAMOST). First moves is exactly what it purports to be — not a playing program but a basic teaching primer which tells the user, in easy and precise stages, how the pieces move. The graphics and instructions are clear and attractive and it is accompanied by an equally clear wall-chart, to reinforce the message. The program is designed for 8 year olds and upwards and I would say there is no upper age limit for anyone interested in acquiring the basic rudiments of chess. But anyone who can already play chess should steer totally clear of this, since it will not offer playing opposition. A big advantage of teaching chess by computer is that the "teacher" will never become bored or frustrated. No need to feel embarrassed if you have failed to absorb any particular point. You can go over it again and again until all valuable and vital information has been picked up.

In contrast, Colossus 2.0 is a playing program. The graphics on my version were not particularly impressive. The pieces are Black and White and fairly clearly drawn, though they tend to merge into the dark background of the board. The pieces are moved by means of a cursor on the board, a somewhat cumbersome method which requires several steps to pinpoint your piece, and more to shift it to its desired location. Another handicap is that the cursor only moves sideways and forwards, not diagonally or backwards. The accompanying brochure is clear, but not extensive.

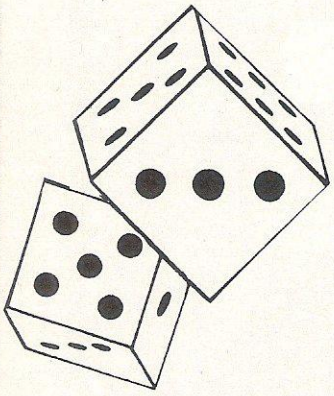
The graphics of Mychess II are more attractive (blue and gold) and more ornate, though less legible. There is a flat board on one side of the cassette and an attractive, but confusing 3D board on the other. This is, however, visually much less impressive than the recently published Psion 3D program. Moves, however, as with Colossus, can always be followed on a command screen. The accompanying brochure is very extensive and the program includes a wide selection of illustrative games by Grandmasters. Notation is algebraic and pieces are simply moved by keying in e2e4, for example. Much better than a cursor!

In all cases I found the sounds produced by the programs something of a distraction and quite rapidly switched the volume off. It is my belief that only inexperienced players would find them really useful as an indication of when the computer has made its move. Of course, some people might prefer a sci-fi backdrop of bleeps while they are concentrating on making their moves.


Lothlorien's
THE
BULGE
£9.99
BATTLE FOR ANTWERP
For Spectrum 48K and Commodore 64
Daniels
• Accurate strategic simulation.
• Real-time combat with full scrolling graphics.
Argus Press Software Group
Liberty House,
222 Regent Street,
London W1R 7DB
Telephone 01-439 0666
LOTHLORIEN

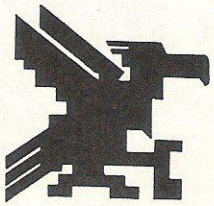
"A lively combination of wits and imagination"

M3 I1 N1 D4 B3 E



"Chess programs do nothing but good for the game"

"Even anti board-gamers will become addicted"



ARCHON

There are people who dismiss the whole concept of board games as boring. Anybody who seriously believes this should take a look at Ariolasoft's Archon.

Reading the accompany booklet should give you an indication of this games differences . . . "In old-fashioned board games the defending piece gets removed quietly from the board and the attacker wins the battle — and the square — without a blow being struck. In Archon we do not allow such docility, such rank defeatism on the part of the defender. No! If you want that square you have to fight for it!"

They mean it too.

There are two screens to this game, the board and the combat arena. Archon is really a fantasy world, based on the eternal struggle between Light and Darkness. To defend the Archon empire you have at your disposal numerous mythological characters — Wizards, Valkyries, Shape Shifters and Dragons to name but a few. You choose which piece you wish to move and where. If that square is occupied you must battle it out using magic and wits.

Graphically this is a superb game with your flying pieces gliding through the air and realistic battles. The sound also adds excitement.

There are quite a few things to learn: eg what special powers are characteristic of each character; remembering to watch out for changing luminosity which effects the strength of your own pieces and those of your opponent (which can be the computer).

I think that even the most anti-board game players will become addicted to Archon.

Graphics: *****
Sound: ****
Playability: ****
CCI Rating: ****
Company: Ariolasoft, Asphalte House, Palace Street, London SW1. Tel: 01-834 8507.
Price: £11.95

CLUEDO

A mysterious murder has taken place at the home of the victim, Mr Black, in Tudor Close, and it's up to you to find out who dunnit.

Cluedo is a detective game for two to six players who take the role of colourful characters like Colonel Mustard, Miss Scarlet and Professor Plum, all with the unique characteristics of those in the board version. Each time a player takes a turn, the computer plays that character's special tune.

Cluedo requires a lively combination of wits and imagination, and the competing sleuths all are eager to find the murderer, weapon and the place the dirty deed took place. All this is done via a series of clues and by clever questioning of your opponents. Clues are held on cards, but since this is computerised the "cards" can be flashed onto the screen whenever a player wishes. Just to be sure, though, you'll have to cover that part of the screen to keep your opponents from peeking.

The computer gives an aerial view of the board along with a full 3D feeling when you enter particular rooms. For the full effect, we would recommend dim lights and creepy quiet.

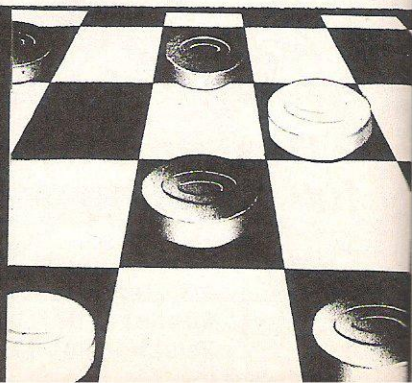
Fast loader: Yes (later versions)
Graphics: *****
Sound: ****
Playability: ****
CCI Rating: ****
Price: £12.95 cassette, £14.95 disk
Company: Leisure Genius, 3 Montague Road, London W1H. Tel: 01-935 4622.

MONOPOLY

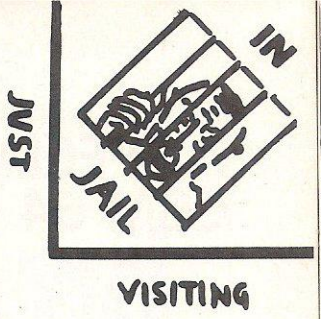
It may be a two dimensional screen and a simple keyboard but the computer does justice to Monopoly, making it complete with dice, houses and most importantly, money.

Leisure Genius has put all the crucial ingredients that have made the original version so brilliant and fun. The board is quite readable on screen and graphics are good because you can see the cars, boats

"An ever-accessible and challenging opponent"



...N.D.E.R.S.



and various titbits that you've chosen as your representatives.

Unfortunately the graphics of the dice rolling are not very good and thus they are difficult to read. But the sound capacity tells you when you've rolled as well as when you're towed off to Jail — directly, of course, and without passing Go.

Fast loader: Yes (later versions)
Graphics: ***
Sound: ****
Playability: ***
CCI Rating: ****
Price: £12.95 cassette, £14.95 disk
Company: Leisure Genius, 3 Montague Road, London W1H. Tel: 01-935 4622.

DRAUGHTS

Draughts must be one of the easiest board games to learn to play. No really complex rules, just a lot of forethought and planning.

Superior Software's computer Draughts provides a challenging game. You can control the level of difficulty for each game by a number of means. You can choose whether to place restrictions on moves, with four values to set levels and determine the amount of time available for each move. You can also control the computer's moves (should you decide to have the computer as your opponent) to the extent that you can force it to make the best, second best or worst move it can.

If you don't like the garish colours presented to you on the two-dimensional on-screen board (which fills most of the screen) you can change any of the colours. It is possible to modify both board and pieces.

There are two ways of entering moves, through coordinations (for example A3-B4) or with the cursor. The former is quicker. If you are stuck for a move, you have the option of receiving a little guidance from the computer. A useful option is the ability to toggle on and off the best moves found so far.

If you get really stuck you can resign or return to the main menu of options.

Quite absorbing to play, but one disappointing aspect is that when a piece is taken it just disappears. Blink your eye at the crucial moment and you don't even see it so.

Graphics: ***
Sound: **
Playability: ****
CCI Rating: **
Company: Superior Software, Dept C, Ground Floor, Regent House, Skinner Lane, Leeds 7. Tel: 0532 459453
Price: £7.95

SCRABBLE

The family game of Scrabble has retained its popularity over the years. If you know someone who is constantly pestering everyone for a game of Scrabble, here's the ideal solution — a computer version from Leisure Genius. Instead of summoning up more feeble excuses, you can now happily respond "I'm sure the computer will give you a better challenge."

The on-screen board is relatively small (about 5×5 inches) and although the letters are still fairly legible some of the numbers could prove hard to read for the short sighted.

Each players hand (up to 4 people can play) is also displayed on the screen which could be frustrating if you're trying to hide a good hand.

There's another cheating possibility too. If you're stuck for a word (or just plain lazy) you can as the computer for a hint. The computer will also jumble your letters for you.

The two-dimensional graphics are average — the board being the size it is shows which squares are coloured, but does not indicate their values, ie double word. (These can be called up if required).

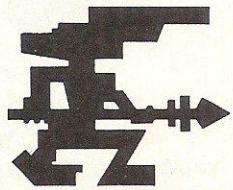
Graphics: ***
Sound: *
Playability: ***
CCI Rating: ***
Company: Leisure Genius, 3 Montague Road, London W1. Tel: 01-935 4622
Price: 12.95

"Always provides a challenging game"

"Toggle on and off the best games so far"

"It is possible to modify the board and the pieces"

"Control the level of difficulty yourself"



A SPECIAL OFFER TO CBM 64 OWNERS

APPROVED
for use with telecommunication systems run by British Telecommunications in accordance with the conditions in the instructions for use

FREE
SUBSCRIPTION TO PRESTEL & MICRONET

Purchase a Tandata complete communications package before 31st July, 1985,* and we'll give you a FREE subscription for 3 months to Prestel and Micronet.

You'll be able to enjoy up-to-the-minute news, comment, articles and reviews via Micronet 800 and Viewfax 258. Download computer programmes — many free of charge. Access all the other Prestel public databases. Communicate with other micros. And even carry out electronic messaging and mailing.

Tandata complete communication packages include a smart auto-dial modem and matching micropack with the appropriate software, cable and manual. In short, everything you need to convert your CBM 64 into a powerful Viewdata terminal.

TANDATA SMART AUTO-DIAL MODEMS

Features: Multi-baud rate (V21/V23); Auto-dial; Auto-recall; Auto log-on; Storage of up to 8 telephone numbers and IDs/passwords.

MICROPACKS

Contain software in ROM cartridge. Features include: Full Prestel colour emulation; Prestel or message editor; Save to disk or cassette; File transmit; Telesoftware downloader; Print.

To take advantage of this limited offer, complete and return the coupon. We'll send full information and an application form.

Name_____

Address_____

_____

_____

_____

Micro make/model_____

Send to: Tandata Marketing Limited, Albert Road North, Malvern, Worcs WR14 2TL.

CCI6

Tandata

Tandata Marketing Limited,
Albert Road North, Malvern, Worcs. WR14 2TL
Telephone: 06845 68421

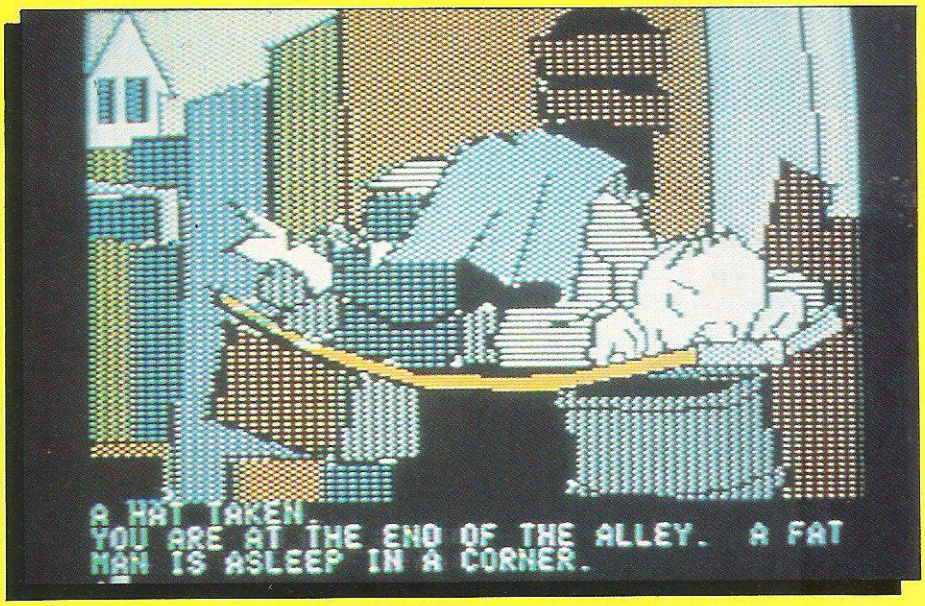
* Subject to availability.

Prestel is a registered trade mark of British Telecommunications plc. Micronet 800 is the trading style of Telemap Ltd. and British Telecommunications plc.

Shadows of the mind

The quest to discover your identity and the search for missing musical notes feature amongst this month's batch of games for the 64, C16 and Plus/4

MINDSHADOW



A healthy challenge and brilliant cartoon-type graphics are an admirable way to launch a line of computer adventure games and that's what Mindshadow does.

Although released by Activision in the US in 1984, these have just come onto the UK market and what a way to start! The marvellous cartoon-like stills used to illustrate Mindshadow are some of the best we've seen. Although there is no animation, the complex possibilities of the text make you glad you don't have to worry about things moving about. You're too busy thinking about your next move.

Strategy is important in Mindshadow, where your mission is to find your own identity — that of the character rather. You begin on a deserted beach and continue, if you're lucky, through faraway places like London and Luxembourg. We weren't quite so lucky, but we saw enough to want to keep trying. A save function lets you take a rest or take a chance without having to start the game over if it fails.

Mindshadow's parser is advanced, allowing a variety of word forms and an extensive vocabulary along with abbreviations. It would be helpful to have some idea of what that vocabulary is, but there is an address you can write for a hint sheet. Until then you have three chances to ask the amusing Condor for help, but even he is a riddle.

For those who are less than experts a tutorial takes you through the basics and if you liked this, you can have a sneak preview of Activision's other adventure, Tracer Sanction. You'll likely want to. **Mindshadow does what it should and much more.**

Type of game: Graphic text adventure
Fast loader: N/A
Graphics: *****
Sound: None
Playability: ****
CCI Rating: ****
Price: £19.99 disk only
Company: Activision, UK, 15 Harley House, Marylebone Road, London NW1. Tel: 01-486 7588

M.U.L.E.

This is a different animal altogether — not arcade, not adventure. The closest description for the way it's played is strategy and the subject economics. But don't sneer yet, for M.U.L.E. will have you laughing at economics before you're finished.

Beginning with a hoof-stomping tune to the sight of a camel-like mule padding across the screen, this game makes you see a lot more than what's on the screen and full comprehension takes some doing.

You've picked your species and are charged with successfully settling the planet Irata by producing food and energy and mining Smithore, whatever that it, with your fully-equipped mule. Nothing is quite normal here (even earthquakes are rather called planetquakes), but the laws of economics do apply and that's where the strategy comes in. You set priorities — whether you should take a turn gambling to make money or use that time to outfit your mule for one or another task. Up to four can play and if only one human participates, the computer takes the other roles. With a choice of species, all unrecognisable, I chose the purple Gollumer and played against the computer's Mechtrons (huh?).

Anyway, technicalites aside, I had a wonderful time at the auctions. It may sound dull to those most dedicated to action-packed games, but M.U.L.E. is a refreshing change from all that without putting you to sleep. The characters are

rain and pest attacks keep the ball rolling. The player's guide is excellent for those daunted by the economic element and has a special section of screen shots for quick learning.

M.U.L.E. is a very original concept imported from the US where it made the top ten. **It may not sell enormous volumes here, but those who take a chance can't help but find it very good, interesting, off-the-wall-intellectual fun.**

Type of game: Strategy
Fast loader: Yes
Graphics: **
Sound: ***
Playability: ****
CCI Rating: ****
Price: £11.95 cassette, £14.95 disk
Company: Ariolasoft UK Ltd, Ashphelte House, Palace Street, London SW1. Tel: 01-834 8507.

MAMA LLAMA

From the wagging ears and tail and nodding heads and curtsies of llamas on the opening screen, Mama Llama may look like just another tame beast with her two babes. But not with Jeff Minter behind it.

Rather, the plaster on one of the babe's cheek in the cover group shot is more an indication of this hazardous, fast-paced trauma. And then there's the small but threatening KillDroid that hovers overhead to protect this cozy family. To do any good, however, you have to master it's inertia-controlled movement — no easy feat if it's possible at all.

As usual, instructions are very involved even not considering the detailed account of what inspired Minter to produce his latest ungulates. Your choice of playing modes, difficulty, scenes, etc, are numerous since you pick from a grid. Minter calls it a "totally amorphous wave select system."

The harrowing pace of Mama Llama is daunting even in the beginner phase but substantial practice sharpens your skills. Meanwhile the changing scenery, situations and attackers keep the player occupied. **This is a toughie probably best conquereed by dedicated Llamasoft fans rather than those just seeking an introduction to Minter's mind.** Considering that, the action is good and Mama and the player could become rather attached to Mama and her babies. All around, it's off-the-wall enough to keep the experts amused and glued to their joysticks.

Type of game: Arcade
Fast loader: Novaload
Graphics: ****
Sound: ***
Playability: ***
CCI Rating: ***
Price: £7.50 cassette
Company: Llamasoft Software Ltd, 49 Mount Pleasant, Tadley, Hants RG26 6BN. Tel: 07356-4478.

GRAND LARCENY

Considering the advances made in computer adventures over just the past year, it is difficult to understand why Melbourne House has come up with one like this — a simplistic step backwards from its last joystick-controlled adventure, Zim Sala Bim.

Both feature terrific background music but the joystick control is no great asset since you must use the keyboard anyway to enter commands. Zim Sala Bim had a charming character as the lead, the Arabian desert as a setting and a stroppy, clever supporting cast. The result was one of the most entertaining arcade adventures of the time. Time is the key. It's been a while since then but Grand Larceny doesn't show it.

The "brilliantly displayed 3D" graphics are nice, but not brilliant. The program's parser is elementary compared to today's standards. Reactions are slow when they happen at all. Responses are the basic "I can't even if the problem is just one word or letter. Instructions tell you to use two word commands though sometimes you need three, and it doesn't accept the command "take" even though it is on the vocabulary list.

One of the plusses is that the location of the hidden plans changes when you re-start the game, and even when you find them it isn't easy to get away from the thugs by the deadline. **But if this is "full of variety and intrigue," we must have been playing the wrong game.**

Type of game: Graphic adventure
Fast loader: Pavloda
Graphics: **
Sound: **
Playability: ***
CCI Rating: **
Price: £7.95 cassette
Company: Melbourne House Ltd, Castle Yard House, Castle Yard, Richmond TW10 6TF. Tel: 01-940 6064

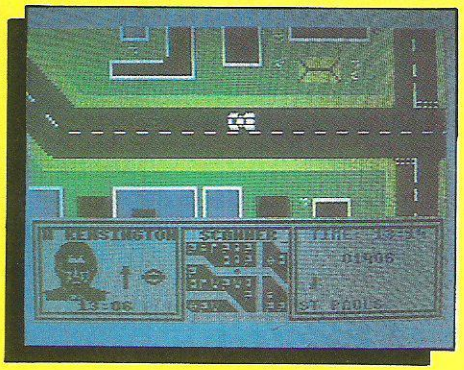
GIVE MY REGARDS TO BROAD STREET

Even if you haven't seen the film, you'll know these characters well by the time you've finished this game.

Give My Regards To Broad Street, based on the film starring Paul McCartney, has entertaining personality sketches of the player's "friends" carrying familiar-sounding names like Ringo and Linda.

You use the sketches to get to know your friends and where they might hang out on a busy Saturday in London. You'll need them to help you find the ten crucial, but missing, notes from "No More Lonely Nights."

What makes Give My Regards To Broad Street great is its unique way of getting the player involved with real-life characters and a place — London — that isn't a figment of some stranger's imagination (though sometimes you might wonder). You get to know it as well as, if not better than, your friends since most of your time is spent driving its streets. And safety counts; you lose points for crashes, running off the road or getting clamped. But you won't die. Argus Press Software says McCartney



was quite involved in creating this game and one of his stipulations was that there be no killing.

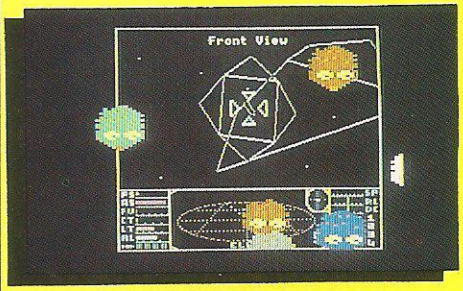
The game takes some work to get the feel of the smooth-scrolling driving screens and to become familiar with your friends' movements. Instructions are complete though they do not come in four languages as stated on the package. The large map of London with relevant sites marked is well-drawn and as interesting as the strategy-based challenge you're given.

Type of game: Graphic adventure
Fast loader: None
Graphics: ****
Sound: ****
Playability: ****
CCI Rating: *****
Price: £7.99 cassette
Company: Argus Press Software, Liberty House, 222 Regent Street, London W1R 7DB. Tel: 01-439 0666

ELITE

About 2,000 unique planets in eight galaxies give some idea of the nearly endless potential for this newest extravaganza from Firebird. And it lives up to expectations.

Elite brings the complex, fascination strategy of war games to peacetime — or mostly peacetime since you still do plenty of zapping and blasting along the way. It is an enhanced conversion of the popular Acornsoft game originally written for the BBC.



You begin as Commander Jameson with "clean" status (as opposed to offender or fugitive depending on your behaviour from here on). You tear through space in your Cobra Mach 2 playing a kind of space trader who buys, transports and sells cargo ranging from food to furs, liquor to luxuries — all in hopes of gaining enough credits (money) to move up in the ranks: harmless to competent to dangerous to Elite.

Buying and selling successfully requires a shrewd mind to examine data about each planet in the particular galaxy you're in (a bit easier than trying to cover all 2,000 at once, though you can jump galaxies by hitting hyperspace) and determine what might sell. An agricultural planet, for example, would pay a high price for computers while a highly industrial planet might pay good money for food or alcohol. Beware of buying slaves and narcotics for they attract the attention of the police. A planet's form of government — anarchy, democracy, etc — makes a difference, too. And watch out for the Trumbles, those mischevious little critters so reminiscent of Star Trek's Tribbles! They may not be the most wise purchase.

When you aren't examining market prices, planet data or your own cargo, Elite's screen acts as a visual for flying your ship. You can have right, left, reat and front views, and a control panel below keeps track of speed, energy level, cabin and laser temperatures and so on.

The visual's graphics give an exciting line-type 3D effect with stars racing by. Enemy ships come in a dozen or more outlined shapes and keep you busy blasting away when you're not involved in heavy bargaining on a planet or space station.

Efforts to explain every element of Elite would take a book and, indeed, you get a substantial instruction booklet not to mention a story booklet and boiled-down reference card in the package — **a value well worth the £14.95 on cassette or £17.95 on disk**. You might consider it an investment. It is no ordinary invaders game and not just a basic strategy. If anything, you'll run out of energy long before Elite runs out of new things to show you.

Fast loader: Yes
Graphics: ****
Sound: ***
Playability: *****
CCI Rating: *****
Price: £14.95 cassette, £17.95 disk
Company: Firebird Software, Wellington House, Upper St Martin's Lane, London WC2H 9DL. Tel: 01-379 6755/5662.

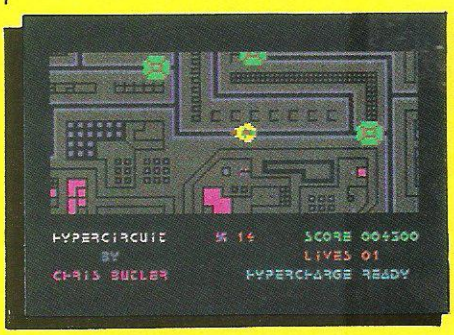
HYPERCIRCUIT

Not a racing circuit, but one most CCI readers can relate to — a circuit board.

It seems to be the vogue subject for films and computer games these days and Hypercircuit is a thrilling, addictive example on the games end. Called "the weirdest fantasy that the human mind and hi-technology could combine to create," this concept is slightly reminiscent of the popular film "Tron".

At breakneck speeds, the player patrols "the world of the microchip" to destroy the enemies, micronasties like Destructors, Chargers and Mains Spikes. You don't get the view from inside the car, though, looking instead at an overview of portions of the board at a time.

A rapid-fire joystick is a great help in Hypercircuit because the nasties are always near even when they're out of view. Instructions are not long and don't need to be and the circuit board's layout changes with each new life. **Powerful graphic and sound effects for characters and**



encounters are exhilarating and will keep you racing about for hours. Pirates beware! This game is protected by a colour security code.

Type of game: Arcade
Fast loader: Yes
Graphics: ****
Sound: *****
Playability: ****
CCI Rating: ****
Price: £7.95 cassette, £11.95 disk
Company: Alligata Software Ltd, Orange Street, Sheffield S14 4DW. Tel: 0742-755796.

DAMBUSTERS

It's 1943 and you have been chosen to lead Squadron 617. Your mission — to destroy the great power dams of the Ruhr Valley.

Dambusters is the latest extravaganza from US Gold, a cross between a flight simulator and an arcade-action game. It is also a game that requires a lot of studying before you put fingers to keyboard (or joystick).

Not only do you pilot your aircraft, but also take on the roles of front gunner, tail gunner, bomb aimer, navigator, first engineer, and second engineer (in Squadron Leader option), while monitoring the status and damage report. Phew! As you can see you need to keep your wits about you.

Each of these options has a separate screen which can be accessed by pressing the relevant number between one and eight on your 64.

You also have the choice of a practise dam run (starting near the dam with no enemy action), Flight Lieutenant (starting near the English Channel), or Squadron Leader (taking off from Scampton Airfield).

A substantial accompanying booklet is essential reading if you want to get anywhere. In addition to playing instructions, it includes War Cabinet briefing documents, information about aircraft and other additional background information.

Graphics add to the game with twinkling lights below, search lights sweeping the sky and splashes if your bomb hits water.

It is a very complex game. You must constantly be on the look out for enemies, thinking ahead to plan routes which will steer you clear of enemy bases, and maintaining the correct course, altitude and speed of your aircraft.

It will take a while to learn which keys do what and the speed, altitude and distance required for various movements, but if you perservere you will discover a very satisfying game.

Graphics: ****
Sound: ****
Playability: ****
CCI Rating: ****
Company: US Gold, Unit 10, Parkway Industrial Estate, Heneage Street, Birmingham. Tel: 021-359 3020
Price: £9.95 (cassette), £14.95 (disk).

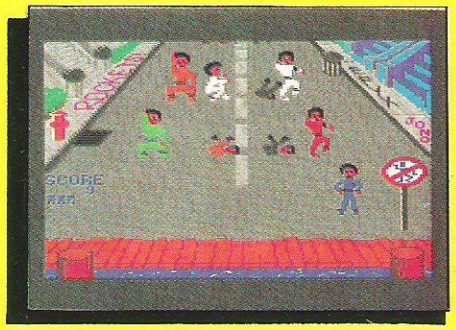
BREAKDANCE

The ghettos that usually form the background for this newest form of dancing are cleaned up in Breakdance, but the fun hasn't been taken out.

Epyx Software only recently introduced its label onto the UK scene through CBS Software International, and the general quality follows in the path of the other American companies. Written by Bech-Tech, Breakdance makes the most of the subject, as much as probably could be done on the computer. Different modes of play take you from practice sessions to choreographing your own dance of several hundred moves to a choice of five break dance tunes. The ultimate is to play all the games successfully and get into the Breakdance Hall Of Fame.

Breakdance is not strictly a games program but who says everything fun as to be. The program is a lively, amusing way of breakdancing without moving much more than a finger. The games include the Hot Feet Dance Contest where the neighborhood master challenges you, the new kid in town; Battle the Rocket Crew that has you trying to oust competitors from your turf; and Perfections Dance Puzzle when you compete with The King.

The manual with Breakdance is excellent and includes a full glossary of terms from "burned" to "wack" to "boogaloo." It also gives step-by-step instructions on performing some of the moves yourself — the safer ones, of course; no "suicide" here. **Overall, it's a refreshingly different way to amuse yourself and learn a whole new way to move.**



Type of game: Strategy
Fast loader: No (20 min cassette loading time)
Graphics: ****
Sound: *****
Playability: ***
CCI Rating: ****
Price: £8.95 cassette, £11.95 disk
Company: CBS Software International, Ashbrook House, 3-5 Rathbone Place, London W1P 1DA. Tel: 01-734 8181.

KNIGHTMARE

The fact that your knight is pudgy and adorable is the first hint that Knightmare may not be the most inspiring adventure around.

Despite smooth animation and at least average music, this game wouldn't keep the attention of an avid games fan. Beginning with an uninspired storyline of find the wizard and destroy him, Knightmare takes you through 80 rooms, many of which look too much alike to count the difference.

This basic arcade adventure features your average staircase, trapdoors and objects to collect or avoid. But instructions are vague as to what to do with the four power spells when you've picked them up and there's no inventory list available. To find the Wizard "you must solve all the puzzles," but what sort of puzzles can you have with no text? Certainly there must be some, but we must have missed them.

For a zap-em game, the action is good, but the adventure element is very weak. It's unfortunate, but the bloody thriller look of Knightmare's cover far outshines what's inside.

Type of game: Arcade adventure
Fast loader: Novaload
Graphics: ***
Sound: ***
Playability: **
CCI Rating: ***
Price: £6.99
Company: Romik Software, PO Box 478, Slough. Tel: 0753-36910.

"THE BERKS TRILOGY" (C16 and Plus/4)

In a very short time, CRL has followed the release of Berks with Major Blink (groan) — Berks II, and Berks III. Of the C16 games we have seen, these three are of the very best.

All arcade-action, Berks has you in control of your expanding terror tank blasting away at the Berks and stunning their faithful homing drones (they cannot be killed). Clear one screen and move onto the next.

In Major Blink, you change your pastime to that of painting. Unfortunately you are harassed by colour blind bears who attempt to repaint your painted blocks. Also you have become an outcast from your own kind who have set the dreaded homing drones onto you.

Berks III returns you to zap 'em action with an element of adventure — move around rooms finding keys and hearts while avoiding the Berks and Drones.

All three games feature impressive colourful and amusing graphics and interesting sound effects. We especially loved the supercool bears in Major Blink whose eyes move shiftily behind their shades as they casually stroll down the screen repainting.

The eight-directional fire of the Powerplay joystick we used is absolutely essential, even on the Duffer level! (Each game offers five levels from Duffer to Master.)

All the elements of good arcade games are included making the Berks trilogy extremely addictive and well worth buying.

Type of game: Arcade
Graphics: ****
Sound: ****
Playability: ****
CCI rating: *****
Price: £6.95 each
Company: CRL, 9 Kings Yard, Carpenter's Road, London E15. Tel: 01-533 2918

STELLAR WARS & BLITZ, (C16, PLUS/4)

This must be one of the least exciting arcade game combos we've seen. We're hoping it was just an accident that slipped through Commodore's doors unfinished.

After just a few minutes of playing either of these games the first question we came up with was "Is that it?" Stellar Wars has fair graphics for a space shoot-em-up but sound effects that could add so much to the effect are virtually non-existent. The occasional flashing screen is accompanied by a slight boom but that's about it aside from a steady hum that works more to put you to sleep than anything else. One praiseworthy factor is that it isn't exactly easy. It's just dull.

Blitz at least has that addictive quality about it, which we found strange considering the boring subject and mechanics. Once again sound effects are kept to a minimum with the most exciting bit being the buildings that pop up on the Manhatten-like skyline in time to notes of a tune. You pilot a light bomber losing altitude over a city, but to land you have to pulverise the buildings below.

Unlike Stellar Wars, Blitz offers only one level of play and you can't drop a second bomb until the first one has (uneventfully) finished its deed. If you crash into a building, the background humming noise stops and your plane quietly splits into two pieces and falls to the ground. "Is that it?"

So the price is only £5.99 for both games. I ask again, "Is that it?"

Type of game: Arcade
Fast loader: None
Graphics: **
Sound: *
Playability: **
CCI Rating: **
Price: £5.99 cassette
Company: Commodore UK, 1 Hunters Lane, Weldon, Corby, N. Hants NN17 1QX. Tel: 0536 205252.

All games reviews appearing in this magazine are personal opinions and serve only as a guide to new games on the market. Our star ratings for graphics, sound, playability and the CCI rating are as follows:

*** = Poor**
**** = Average**
***** = Good**
****** = Very good**
******* = Excellent**

PSYCHEDELIA

AN ENTERTAINMENT by Jeff Minter.....

An Explanation of the Concept... PSYCHEDELIA is really the culmination of several months' idle thinking. I love games, but occasionally I'd think 'there must be some OTHER way of enjoying yourself using the computer...' I also love music, and I'd daydream about creating... something... you could do to music, something you could put on the screen at a party and anyone could come up and have a go, something you'd do just because you enjoyed it, something others could enjoy even if they weren't actually doing it themselves. Gradually the idea solidified into the concept of a light-show generator, something interactive, creative but simple enough so that anyone could do it, yet complex enough to produce breathtaking results once learned well. A program to do for light, in fact, what a synthesiser does for sound.

PSYCHEDELIA is the realisation of that dream. Some idle tinkering on a Sunday afternoon produced such startling results that all other work was dropped in order to pursue the development of my Light Synthesiser at last. Many evenings were spent in darkened rooms just freaking out to music and DOING it. Demos were given, minds were blown and a good time had by all.

PSYCHEDELIA is a completely new way of enjoying your micro. If you love music, if you love graphics, if you are creative then you'll enjoy PSYCHEDELIA. You'll boot it in when you turn on your hi-fi. You'll find an appeal totally different to that of even the best games. You wont get bored, because the pleasure is as fundamental as that of listening to music, and you'll create different, dynamic light shows each time you use the program.

PSYCHEDELIA is the high point of my designing career so far. The concept is simple, the programming not too complex but the parts combine synergistically to create a whole which has given me the most pleasure to use, and the biggest pride in design, of anything I've ever programmed.

Enjoy PSYCHEDELIA. This one comes straight from the heart.

PSYCHEDELIA IS NOW AVAILABLE FOR VIC 20, CBM 16, CBM 64, SPECTRUM 48K, MSX AND SOON FOR THE 32K ATARI AND AMSTRAD COMPUTERS

Llamasoft

AVAILABLE FROM W.H. SMITHS, BOOTS, WOOLWORTHS AND MOST COMPUTER RETAILERS OR FROM LLAMASOFT 49 MOUNT PLEASANT, TADLEY, HANTS (TEL. 07356 4478) SAE FOR CATALOGUE & NEWSLETTER

'THE NATURE OF THE BEAST!

NEW GAMES RELEASES

ARCADE GAMES

Cave Fighter, (£5.95 cassette), for the VIC 20 and C16, released by Bubble Bus Software, 87 High Street, Tonbridge, Kent TN9 1RX. Tel: 0732 355962.

Rock 'N' Bolt, (£10.99 cassette, £19.99 disk), released for the 64 by Activision UK Ltd, 15 Harley House, Marylebone Road, London NW1. Tel: 01-486 7588.

Super Pipeline II, (£8.90 cassette, £11.99 disk), released for the 64 by Taskset Ltd, 13 High Street, Bridlington YO16 4PR. Tel: 0262 673798/602668.

Glider Pilot, (£8.95 cassette), for the 64; **Major Blink** and **Berks III**, (£6.95 cassette), for the C16, all released by CRL Group PLC, 9 Kings Yard, Carpenter's Road, London E15 2HD. Tel: 01-533 2918.

Galaxions and **Robin To The Rescue,** (£6.95 cassette), released for the C16 and Plus/4 by Solar Software Ltd, 77 West Drive, Bury, Lancs BL9 5DW. Tel: 061-761 1770.

BC 11: Grog's Revenge and **Dambusters** (£9.95 cassette, £14.95 disk), released for the 64 by US Gold Ltd, Unit 10, Parkway Industrial Estate, Heneage Street, Birmingham B7 4Ly. Tel: 021-359 3020.

Moon Buggy, (£6.95 cassette), released for the C16 by Anirog Software, Unit 10, Victoria Industrial Park, Victoria Road, Dartford, Kent DA1 5AJ. Tel: 0322 92513/8.

Gribbly's Day Out, (£7.95 cassette), released for the 64 by Hewson Consultants Ltd, 56B Milton Trading Estate, Milton, Abingdon, Oxon OX14 4RX. Tel: 0235 832939.

Stringer, (£6.95 cassette), arcade adventure released for the 64 by Addictive Games, 7A Richmond Hill, Bournemouth BH2 6HE. Tel: 0202 296404.

3D Skramble and **Carry On Laughing**, (£6.95 cassette), released for the 64 by Live Wire Software, Progress House, 31/33 Mount Street, Salford, Manchester M3 6LQ. Tel: 061-834 4233.

ADVENTURE GAMES

Entombed, (£9.95 cassette), graphic adventure released for the 64 by Ultimate, The Green, Ashby de la Zouch, Leicestershire LE6

Gremlins, (£9.95 cassette), graphic adventure for the 64; **Gremlins** (£7.95 cassette), text adventure for the C16, both released by Adventure International, 85 New Summer Street, Birmingham B19 3TE. Tel: 021-359 0801.

MISCELLANEOUS

Theatre Europe, (£9.95 cassette, £12.95 disk), war game released for the 64 by PSS, 452 Stoney Stanton Road, Coventry CV6 5DG. Tel: 0203 667556.

World Series Baseball, (£7.95 cassette), sports simulation released for the 64 by Imagine Software Ltd, 6 Central Street, Manchester M2 5NS. Tel: 061-832 6633.

Grand Master, (£8.95 cassette), chess game for the C16; **Super Huey** helicopter simulation and **Talladega** car racing simulation, (£8.95 cassette), for the 64; all released by Audiogenic Ltd, 39 Suttons Industrial Park, London Road, Reading RG1 6AZ. Tel: 0734 664646.

Spitfire 40, (£9.95 cassette), flight similation released for the 64 by Mirrorsoft, Holborn Circus, London EC1P 1DQ. Tel:01-822 3947.

Gremlins in new machine

You have a choice of creatures for your machine from Gremlin Graphics — a tycoon, hungry beetles or aliens.

Tycoon Tex, £6.95 for the C16, is set in the Old West where Tex patrols his oil pipeline to keep it safe from aerial bomb attacks, surface missiles and crash explosives. Petals of Doom, £6.95 for C16 and Plus/4, is set in a garden. Yes, one of those flowery things, but the flowers are in danger of invasion by alien bugs. Xargon Wars in another original for the C16 and Plus/4 machines and sells for £6.95. It's a standard arcade graphics-action with 16 subject screens and various levels of difficulty "edging on the impossible."

Contact: Gremlin Graphics, Alpha House, 10 Carver Street, Sheffield S1 4FS. Tel: 0742-753423.

Dead brilliant

11 March 1985

"I learned today that I am to be the subject of a computer game. I don't really know what to make of this. However, I am told that the object of the game is to make me popular with everyone, which sounds dead brilliant. Although rather difficult, I should think. I phoned Pandora to tell her the news, but she said what was the point as I don't have a computer. My mother says putting my secret diaries on a computer is sinister and she is writing to the Guardian about it."

That's the beginning of this much-more-interesting-than-most press release delivered to CCI recently. It's The Secret Diary Of Adrian Mole Aged 13¾ and The Growing Pains of Adrian Mole, both computer games in the wings from Mosaic Publishing. But don't hold your breath. They won't be out until autumn.

The games are based on the popular books by Sue Townsend that have sold more than two million copies. The musical based on the first book is playing in London's West End and Thames TV plans an Adrian Mole television series for the autumn. The computer game is being written by Level 9 Computing for Mosaic to be available for the 64.

Theatre of war

PSS is putting the unthinkable onto computer — another war in Europe.

Along with warnings that this "must never be allowed to happen," Theatre Europe portrays the first 30 days of

this next war after a breakdown in arms talks between the US and Soviet Union in Geneva. The war game is part of PSS's Wargames Series and based, the company says, "on accurate information released by NATO, the Ministry of Defence and informed Soviet military observers."

Even the jacket of the game says, "Whilst the producers of Theatre Europe have taken every care in researching this program to ensure the accuracy of details, we must stress that the events depicted in this conflict simulation are entirely fictitious — They must never be allowed to happen, the danger is that they might."

Created for the 64, Theatre Europe has the player in the role of forces commander responsible for allocating military resources effectively. You have the choice of commanding either NATO or Warsaw Pact forces. The game features three levels of play, music by Lennon and McCartney, a full colour map and instruction booklet.

Contact: PSS, 452 Stoney Stanton Road, Coventry CV6 5DG. Tel: 0203 667556.

Stealing the bases

Baseball in 3D complete with an on-screen close up shot is the latest product from Imagine, and it's a homer.

World Series Baseball is a new sport simulation that recreates the live action of a world class baseball match. Available for the 64, the simulation has a one or two player option and even cheerleaders to psyche up the team.

The joystick is used to choose the type of throw, which bases to pitch out or "steal" or to control field players who catch or pick up balls. The ball's shadow indicates height or direction. The Commodore version does not use the keyboard.

But if you're as unfamiliar with baseball as with Chevrolet, you can watch the computer play a few innings.

World Series Baseball retails for £7.95 on cassette only.

Contact: Imagine Software Ltd, 6 Central Street, Manchester M2 5NS. Tel: 061-832 6633.

Thor cartoon saga continues

The odd-looking character with stone as his primary mode of travel is back.

US Gold has announced the sequel to BC's Quest for Tires (released by Software Projects), BC II: Grog's Revenge. The high resolution cartoon-style game has the leading man, prehistoric through he may be, searching for the meaning of life. But for some reason that CCI is looking forward to discovering he won't find it without clams (eh?). To get them, Thor climbs steep hills, dodges rocks and potholes and rolls speedily through caves all the while avoiding (you hope) Tiredactyls and... the Mighty Grog.

Grog's Revenge will retail for £9.95 on cassette and £14.95 disk.

Contact: US Gold Ltd, Unit 10, Parkway Industrial Centre, Heneage Street, Birmingham B7 4LY. Tel: 021-359 3020.

Following success

The Staff Of Karnath episodes continue.

Ultimate Play The Game is set to release the second instalment of its Staff Of Karnath adventure series. Considering the money spent on publicity, Ultimate seems to be expecting the same success as came with the first of the games. The new title is Entombed and is to be available on cassette for £9.95.

Entombed stars Arthur Pendragon (notedly similar to the name of King Arthur's father) in a 3D graphic adventure.

Contact: Ultimate Play The Game, The Green, Ashby de la Zouch, Leicestershire LE6 5JU. Tel: 0530 411485.

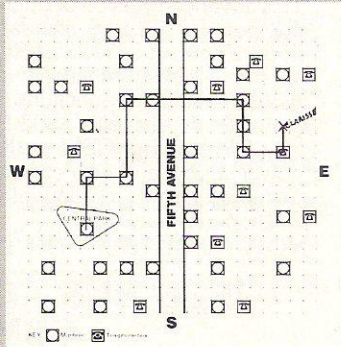
Ten winners in CCI contest

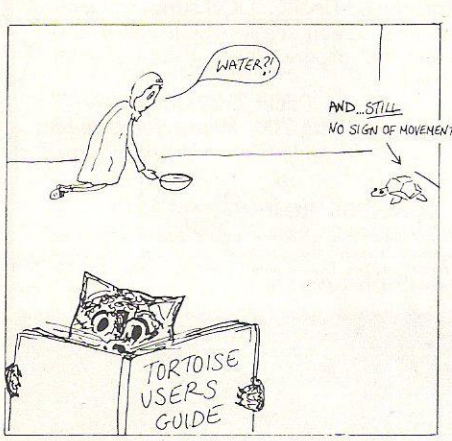
Congratulations to R A Ford of Camberley, Surrey — the winner of our Fahrenheit 451 competition. He is now the proud owner of a Commodore 1541 disk drive plus a Trillium game of his choice — Rendezvous With RAMA — and a Windham Classic game of his choice — Below The Root.

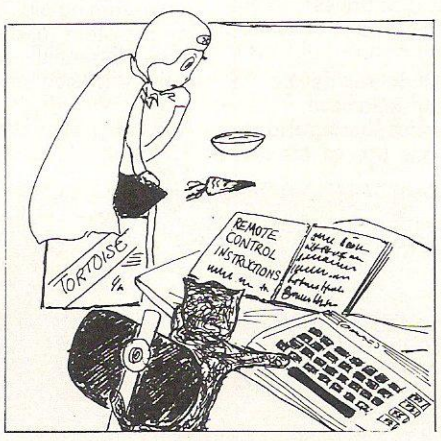
Entrants had to find the correct path on a grid that would find Clarisse, a character in the Trillium adventure game Fahrenheit 451, in the shortest possible time using certain clues. We were happy to find that most of our readers were clever enough to figure it out correctly and we chose the first 10 correct entries as winners.

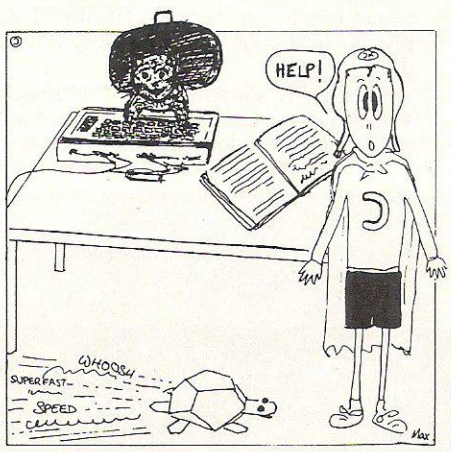
The nine runners up, who each received one Trillium and one Windham Classics computer adventure of their choice, are Mr D Hill of Weston-Super-Mare, Avon; Mr B G Gilfoy of Scunthorpe, South Humberside; J D Burke of Blackpool; D R Goodall of Horsham, Sussex; Mr Chris Parkin of Rochester, Kent; M R Walland of Upminster, Essex; M N Daniel of Grickhowell, Powys; B E S Bean of Merrow, Guildford; and Derek Mealing of Witham, Essex.

Shown below is the correct path leading to Clarisse

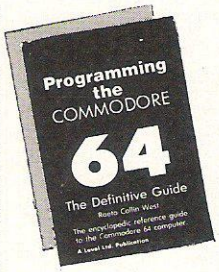








COMMODORE 64 OWNERS
The Ultimate Reference Book



Programming The Commodore 64 by Rae West

Comprehensive and readable teaching and reference book on the 64. Takes over where Commodore's manual leaves off. Much larger than most computer books. Programs available separately on disk or as pack of 2 tapes – saves keying time.
Topics covered include course in BASIC programming. how BASIC works, extending BASIC, machine-language course, ROM guide and memory-maps etc, thorough coverage of graphics and sound, tape and disk handling hardware.
"Best of all the books . . . required reading for all those who wish to make full use of their 64s" – Jack Cohen.

Programming The Commodore 64 (R. West) £14.90 in UK/Europe. 624 page paperback. 17 chapters & appendices. ISBN 0 9507650 2 3. Published by Level Ltd. (Computer Publications), P.O. Box 438, Hampstead, London NW3 1BH.

Programming The Commodore 64 Disk £8.90 (incs. VAT) ISBN 0 9507650 3 1.

Programming The Commodore 64 Tapes £9.90 (incs. VAT) ISBN 0 9507650 1 X.

Programming The VIC (R. West) £10.90. Large paperback. ISBN 0 950 7650 1 5. "Packed with virtually all the information you are likely to read" – J. Goldsmith.

Programming The PET/CBM (R. West) £18.90. Large paperback. ISBN 0 9507650 0 7. "Undoubtedly the most comprehensive reference I have seen" – Jim Butterfield.

MAIL ORDER FORM

From booksellers/retailers/dealers or by direct mail. Send orders and make cheques payable to Level Ltd (Computer Publications), c/o Biblios Distribution Ltd, Star Road, Partridge Green, Nr Horsham, W. Sussex RH13 8LD.

Quantity	Title	Price	Total
_____	Programming The Commodore 64 (West)	£14.90*	_____
_____	Programming The Commodore 64 Disk	£ 8.90**	_____
_____	Programming The Commodore 64 Tapes	£ 9.90**	_____
_____	Programming The VIC (West)	£10.90*	_____
_____	Programming The PET/CBM (West)	£18.90*	_____
	*Add £1 each postage		_____
	**Add 50 each postage		_____
	TOTAL PAYMENT		_____

NAME/ORGANISATION: _____
ADDRESS: _____

CCI 06 85

NEW

PET CONVERSIONS & UPGRADES

It's here at a **NEW** low low price!! Don't throw out your old 9" PET. The **MICROPORT 80** column conversion board for the 9" PET/CBM BASIC 4.0, or upgraded 2001/3000 series machines, will upgrade it to a true 8000 series. Simply plugs into the main logic board and with a small keyboard modification turns your PET into an 8032. Compatible with 8032 software and add-on ROM utilities. Supplied complete with full fitting instructions, or fitted free of charge if brought to our workshops.

Full money back guarantee within 14 days if not delighted.	£125.00
Externally mounted switching unit for above (40/80 column switchable)	£15.00
12" VDU (FAT40) 80 column conversion	£82.00
40 to 80 column switchable (two machines in one!)	£98.00

Full keyboard functions:– i.e. TAB, ESC, REPEAT, SCROLL up/down, define WINDOW, lower case, graphics mode & DELETE from/to cursor. All available in direct or program mode. Any MICROPORT converted machine is also upgradable to 8096 specification with our 64K add-on board. £250.00

CBM 64 QUALITY SOFTWARE

If you own a PET system with disks or printer and have added a COMMODORE 64 then why not use your PET as an interface for the 64?
SIPOD is a serial IEEE to parallel IEEE software interface allowing you to use all the PETs disk drives, printers, plotters, modems etc. directly from the 64. No memory space is consumed within the 64 as **SIPOD** loads and executes within the PET. **SIPOD** is supplied complete with interface lead and instructions. £29.00

PRINTLINK 64. Interfaces a 64 directly to any printer with a Centronics input. The printer will respond to all the normal Basic commands for device #4. Supplied complete with instructions and interface cable. £26.00

We only sell one word processor for the 64. We think it is the best!

VIZAWRITE 64. Text formatting word processor. Disk or cartridge	£69.00
VIZASPELL 64. Spelling checker with 30,000 word dictionary	£59.00
VIZAWRITE + VIZASPELL. Combined package. (Disk only)	£99.00
MIKRO ASSEMBLER. Write machine code with the ease of BASIC	£50.00
ARROW. Save & load to tape up to 7 times faster than normal	£39.00
VICTREE. All Toolkit & BASIC 4.0 commands plus a lot more	£49.00
ZOOM. An excellent machine code monitor for the 64	£10.00
GRAPHIX 64. Easy to use Hi-Resolution graphics from BASIC	£10.00
STIX. A most addictive and compelling game (joystick required)	£17.35

Official orders from schools, universities, major companies etc. are welcome. U.K. customers please add 15% VAT. Prepaid orders are POST FREE.

Telephone Mick Bignell for details of any of the above at:–

MICROPORT 7 Clydesdale Close, Borehamwood, Herts. WD6 2SD. Tel: 01-953 8385

EPROM PROGRAMMER MK3

This advanced version of our Mk.2 Programmer will program the popular industry standard 2516, 2716, 2532, 2732, 2564, 2764, and 27128 EPROMS. Disk-based software with all the essential functions for fast and reliable EPROM programming. 14 functions including Check-Empty. Program, Verify, etc; plus 6502 Disk Assembler and Assembler Hex-File loading (CBM or JCL Assemblers). With built in power supply and new custom case, this is the Programmer Commodore use at Slough! Price £299 + VAT including 2716 personality card.

NOW AVAILABLE FOR THE CBM 64!

IEEE BUS-ADAPTOR FOR CBM 64

A superior adaptor at a reasonable price. This brand-new item allows you to use standard CBM/PET IEEE disk drives and printers and your CBM64. Many advanced features including:

- ★ MINI-DOS support
- ★ Batch file loading
- ★ Gold-plated edge connector for long term reliability
- ★ Selectable default/device number for load/save
- ★ Multi-user bus sharing and simultaneous use of the serial bus.

Supplied with instructions detailing these features plus many more. Price £59 + VAT.

HS-64 ASSEMBLER AND PROGRAM DEVELOPMENT AID

A powerful two-pass symbolic assembler combined with a number of toolkit programming aids. Functions include AUTO line number, FIND string, CHANGE string, DELETE line rangerange, TYPE to inspect or print a file without loading it into memory, GET source text file, PUT outputs source file to disk, DO executes first line, RENUMBER lines JOIN program files, screen SCROLL and refresh facility, CBM or ASCII code selection, RBAS reset, SIZE of file and start/end load address, SETBRK and CLRBRK to insert and remove break points from program being tested in RAM. HEX/DEC and DEC/HEX conversion. MONITOR with comprehensive facilities including screen DISASSEMBLER.

Price £47.83 plus VAT

700 WORKSHOP

Superb cartridge for CBM700, contains 10 toolkit-type programming aids, Enchanced BASIC, DOS support, Data-input system, bi-directional screen scroll, ASCII editor and more. Essential Aid for 700 programmers. Supplied with comprehensive manual.

Price £120.00 plus VAT

Assembler also available for CMB 700. *Phone for details.*

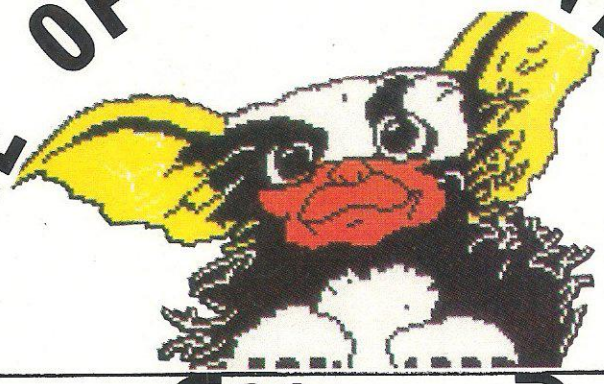
BUSINESS ROM

The BUSINESS ROM for 4000/8000 Commodore Machines adds 25 additional keywords to BASIC. Super screen management & input systems coupled with efficient easy-to-use relative file handling . . . and more. Includes DOS-support. Used by many major UK companies who require the best! Price £80.00 + VAT.

JCL SOFTWARE
1 Sheffield Road, Southborough
Tunbridge Wells, Kent

Phone 0892-27454
for data-sheets or
contact your nearest
Commdore dealer

GAME OF THE MONTH ....



Gremlins

Adventure International's Gremlins, based on the popular Spielberg film, bears the scrutiny of CCI Readers' Panel members

From delight to disappointment, our Panel had curiously mixed reactions to Gremlins but gave it an overall thumbs-up.

Based heavily on the film, the Gremlins computer adventure is loyal to plot, setting and characters and the animated graphics get three cheers from our panel.

The main character Billy (you) has made the mistake of feeding Gizmo's 'innocent' offspring after midnight and must see to it that the transformed now-nasty creatures (Gremlins) don't over-run the town of Kingston Falls. Fortunately, your cuddly friend Gizmo, still a Mogwai, pops up occasionally to help.

"It is an enormous help if you've seen the film first," says Craig Pemberton, 14, of Netherton in Merseyside. "I hadn't and found myself having to rely on the hint sheet which is available free from Adventure International."

Apparently that is a matter of opinion.

R J Penfold, 28, of Southampton, says, "You don't have to see the film to play this story."

Generally, first impressions were good.

"While it is loading it displays a brilliant picture of a Gremlin which looks so realistic that you think that it might jump off the screen and bite you," says 13-year-old Martin Younger of Stockport, Cheshire.

Penfold calls it "a highly detailed hi-res picture of the greasy Gremlins" and goes on to say, "After the choice of loading a saved game, the first thing that strikes you, almost literally, is a Gremlin throwing a dart at you."

In fact, 34-year-old Elizabeth O'Brien of Madeley, Cheshire, observes, "The game is fast loading and your game can be saved for play at a later date, very necessary in this game. I got killed at least five times in location one. There is a lot to do, though, so you do not get bored easily."

Penfold found that: "A major portion of your adventure will be spent avoiding a gang of Gremlins and a bulldozer (snow plough)."When it came to a deeper delving, graphics got good reviews all around (almost).

"The graphics are such as we've come to expect from Adventure International — colourful, original and quite breathtaking," says Pemberton. "I found each of the locations interesting little adventures in their own right, all sporting areas to be explored, objects to collect and some loathesome little Gremlins.

"Sometimes they can be despatched with some handy implement," he continues. "I succeeded in decapitating, cooking, liquidising and impaling a number of our fanged friends."

I'm in a Kitchen. Things I see:
Microwave Oven, Food Blender, Closed Laundry Chute, Closed Drawer, Dead Gremlin in Blender, Cooked GREMLIN in Microwave.
Exits: EAST
---WHAT NOW ? PRESS BUTT
O.K. Blender started! I blended a GREMLIN
---WHAT NOW ?

For O'Brien, "Gremlins is a very good game, rather difficult to play as the horrid little creatures follow you everywhere and savage you to death nearly every other move, the rest of the time the uncouth little monsters spend their time smoking, spitting or drinking in the local bar."

Col T P Ruckwood of RAF Bishops Court in Ireland wasn't quite as impressed. "The Gremlins who appear frequently during the game are well drawn, as are all the graphics, and some scenes even have simple animation. The games will keep you going for hours as you try to decipher the jumbled mass of descriptions and commands littered on the screen."

Pemberton comments, "I found it fiendishly difficult as I knew exactly what to do but not how to do it. A little careful thought and a few more hours of play should solve this, however."

But some of our panel were bugged by gremlins of a different sort. "The most worrying thing about this program is the instruction leaflet that accompanies it," 17-year-old David Cooper of Northwich said. "It starts with a good introduction to adventures but then goes on to list "some helpful words" six of which don't work including the essential HELP command."

Younger found the same. "The instructions are not quite accurate because the Commodore 64 version does not understand some of the vocabulary that the booklet says you can use."

And Ruckwood says, "After some exploration I tried to enter a petrol station and simply typed "ENTER" only to find myself mysteriously transported to a staircase in a department store."

Our panel's conclusions

Despite these unpleasant surprises, Gremlins generally got a nod of approval from our panel.

"I found Gremlins to be a very good game indeed and think it is **certainly worth buying**." — O'Brien.

"Don't let any gruesome touches put you off, for **this adventure is fun**, will provide hours of exercising the grey matter and will appeal even to non-Spielberg fans." — Penfold.

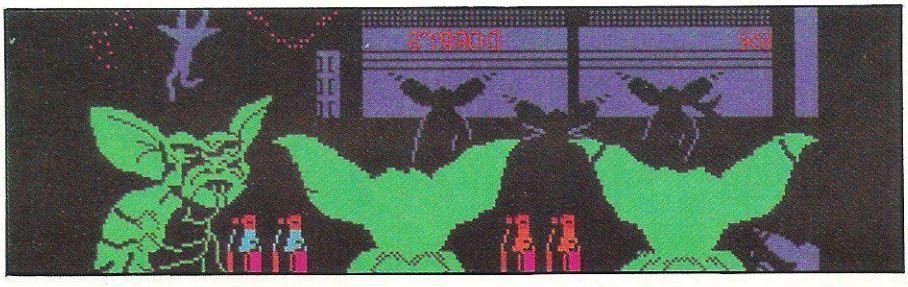
"Overall it's an ingenious if not original scenario. Well suited to the adventure game, it **makes for an absorbing play**." — Pemberton.

"You've seen the film, you've read the book, but as for the game, **forget it**." — Ruckwood.

"Overall a good program with **excellent graphics** but far too few locations." — Cooper.

"This game is **definitely worth buying**, so if you are into adventures, then this is the one for you." — Younger.

Our panel reviewed the 64 version of Gremlins (£9.95 on cassette). A text-only version is available for the C16 and Plus/4 at £7.95 (cassette).



Observe and WIN

If you're bright enough, tough enough, wise enough and observant enough you may get the chance to pilot Airwolf — on computer, of course!

The computer game based on the Universal Pictures television series is out now from Elite Systems and the pictures on this page could be your chance to win the Commodore 64 game or a digital wristwatch or a huge wall poster ... or the whole lot! Read on for details, but most of all, look carefully.

The television series, shown in Britain on ITV, stars — besides Airwolf — Jan Michael Vincent as Stringfellow Hawke, a former Vietnam chopper pilot and the only man trained to control the monsterous, highly sophisticated helicopter based on high technology already available, though few are aware of it. It's all for the good of the free world, naturally, and Airwolf rarely gets respite from its crucial missions. The series will return to British screens again in September.

In the joystick-controlled computer game, the player takes Hawke's role and commands Airwolf to rescue some of the world's most brilliant scientists who have been kidnapped and are now in the clutches of the evil mastermind General Zaranov.

As for Airwolf, he will not be ignored. His dark, ominously powerful frame with its mysteriously smoked, quadruple-glazed windows and mighty blades are the trademark of a one-of-a-kind machine! The game gives simulated helicopter control, full gravity and momentum effects with 64 directional smooth scrolling and large scale animation.

And that's just one of the possible prizes. Elite Systems is offering.

The Prizes

Ten top prizes of the Airwolf computer game for the 64, a digital watch from House Martin embossed with the Airwolf logo and a full colour glossy 5' by 3' poster of Airwolf; plus

Ten second prizes of the Airwolf game for the 64; plus

Ten third prizes of the poster.

Your Mission

Now here's your prize-winning mission. Examine closely the Airwolf helicopters you see on this page and find the TEN differences between the two, then circle them clearly and send the page (or a photocopy of it if you want to keep the mag intact) to:

Airwolf Competition
Commodore Computing International
40 Bowling Green Lane
Finsbury Business Centre
London EC1R ONE

Deadline for the competition is Friday, 7th June 1985, so all entries must be in our office by that day (allow for posting time).

Good Luck, Stringfellow Hawke!!!

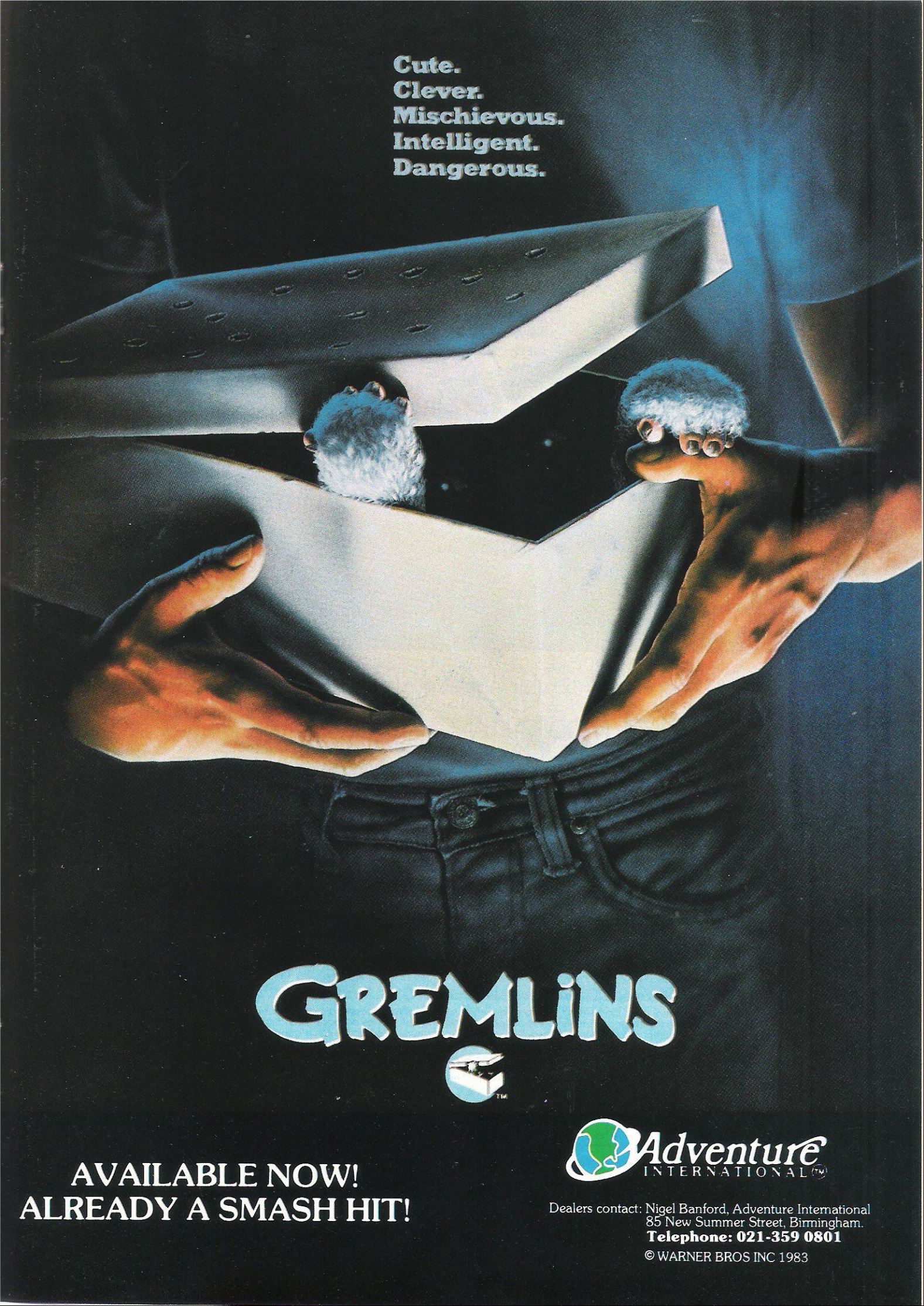
Your Name:_____

Address:_____

_____

_____

On picture 2 (below) circle the 10 differences compared to picture 1



AVAILABLE NOW!
ALREADY A SMASH HIT!

Adventure INTERNATIONAL™

Dealers contact: Nigel Banford, Adventure International
85 New Summer Street, Birmingham.
Telephone: 021-359 0801

© WARNER BROS INC 1983

TOP TWENTY

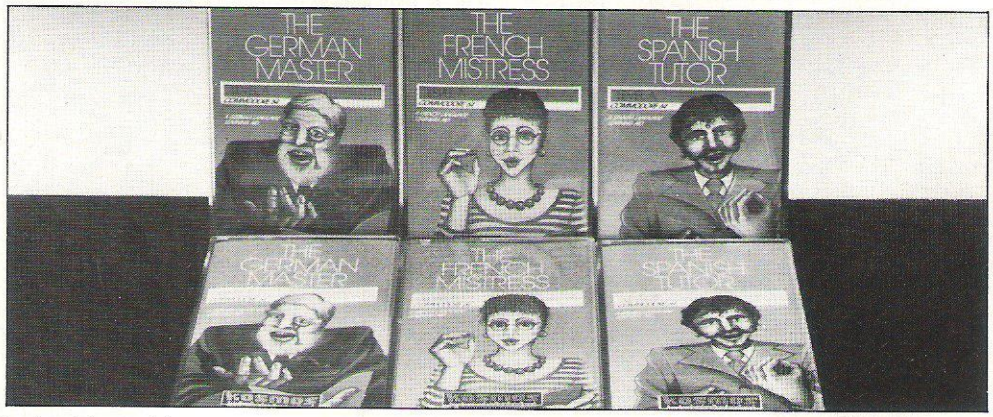
	GAME TITLE	CHANGE	COMPANY	PRICE (£)
1	Impossible Mission	UP	Epyx	8.95
2	Ghostbusters	DOWN	Activision	10.99
3	Slap Shot	UP	Anirog	8.95
4	Pastfinder	UP	Activision	5.99
5	Pole Position	NEW	US Gold	9.95
6	Buck Rogers	NEW	US Gold	9.95
7	Soft Aid	NEW	Soft Aid	4.99
8	Raid Over Moscow	DOWN	Access/US Gold	9.99
9	Chiller	UP	Mastertronic	1.99
10	Booty	NONE	Firebird	2.50
11	Lords of Midnight	DOWN	Beyond	9.95
12	Shoot The Rapids	NEW	New Generation	7.95
13	Mega-Hitz	NEW	Beau Jolly	19.95
14	1985	NEW	Mastertronic	1.95
15	Gryphon	DOWN	Quicksilva	7.95
16	Rocket Ball	NEW	I.J.K.	7.95
17	Football Manager	RE-ENTRY	Addictive	7.95
18	BMX Racers	UP	Mastertronic	1.99
19	Daley Thompson's Decathlon	DOWN	Ocean	7.90
20	Tir Na Nog	NEW	Gargoyle	9.95

BUBBLING UNDER

Archon	Ariolasoft	11.95
Rock and Bolt	Activision	9.99

Compiled by CCI from leading distributors

FOR CONNOISSEURS
OF MODERN LANGUAGE LEARNING
COMMODORE 64 ● BBC (32K) ●ELECTRON ● SPECTRUM (48K)



Dealers, contact Lightning, Proteus, Centresoft, Microdeal or Tiger.

All titles are immediately available from good computer stores or by 24-hour mail order. Price £8.95 (overseas orders add £1)

For beginners, O-level and beyond, these best-selling programs are unique and highly successful aids to language learning. Each cassette provides a comprehensive series of vocabulary lessons and a variety of self-paced learning and test modes. All accents and special characters are clearly displayed and different colours denote masculine, feminine and neuter words to reinforce gender learning.
The create command enables new lessons in vocabulary or grammar to be entered, edited as required, then saved on tape. By using this simple yet vital feature, homework lists and exam revision can be retained indefinitely and recalled on demand.
Two cassettes are available for each language, covering thousands of words; Level A provides 16 lessons in general vocabulary; Level B provides a further 16 lessons including adjectives, adverbs and fully conjugated verb lists.

KOSMOS SOFTWARE

KOSMOS SOFTWARE LTD 1 Pilgrims Close, Harlington, DUNSTABLE, Beds. LU5 6LX Tel: (05255) 3942

The French Mistress Level A @ £8.95 ☐ The French Mistress Level B @ £8.95 ☐
The German Master Level A @ £8.95 ☐ The German Master Level B @ £8.95 ☐
The Spanish Tutor Level A @ £8.95 ☐ The Spanish Tutor Level B @ £8.95 ☐

KOSMOS SOFTWARE LTD.
1 Pilgrims Close, Harlington, DUNSTABLE, Beds. LU5 6LX.

Computer type.....(Commodore 64/BBC/Electron/Spectrum)
Mr/Mrs/Miss .....
Address .....
.....
.....Postcode .....

COMMODORE

Don't miss out!

With the growing popularity of Commodore Computing International Magazine, newsagents and bookstalls sell out quickly. More and more frustrated readers wanting the one magazine every Commodore owner needs are finding they are missing out and some months having to do without the latest news, reviews and vital feature articles and programs.

The popular solution is to place an order for your Commodore Computing International Magazine with your newsagent or by direct subscription to us.

A subscription means you get the magazine delivered to your door. It saves you time and makes sure you don't lose out on what's happening in the Commodore world.

Send in the subscription coupon below and get the best Commodore magazine the easy way — through your letterbox. Don't miss out on the best, mail the coupon **now**.

(If you don't want to cut up the magazine, we're happy to have a photocopy of the coupon or a request on plain paper.)

Commodore — Subscription Order Form

To Subscriptions Manager, Commodore Computing International, 40 Bowling Green Lane, London EC1R 0NE. Tel: 01-278 0333 Telex: 267247 FINSEC

Please send me 12 issues of *Commodore Computing International*

☐ Cheque enclosed ☐ Please debit my Access

Card No. | | | | | | | | | | | | | | | | |

☐ Subscription rate U.K. £15.00
☐ Europe £20.00
☐ Outside Europe £28.50

Expiry date: _____

Cheques should be made payable to: CROFTWARD LIMITED

Name _____

Address _____

_____

County _____ Post Code _____

Telephone (home) _____ (business) _____

Signed _____ Date (Subscription to commence) _____

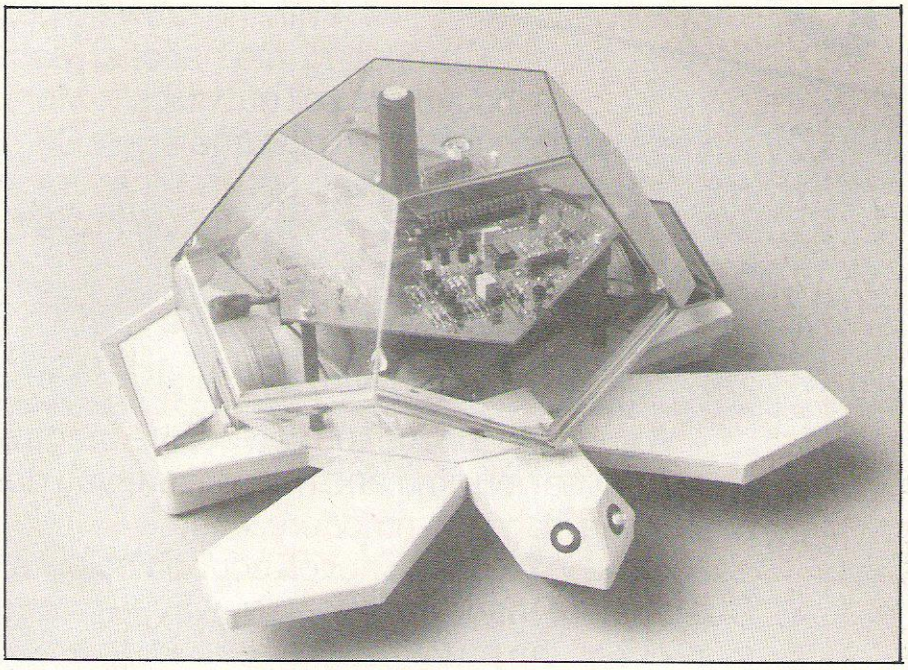
Turtles in the sea of learning

Some robots, called Turtles, provide a painless method of learning about computers, programming and robots. Robotics author and ex-teacher Deborah Black looks at their widespread uses and focuses on the Valiant Turtle

Practical experience is the best way of understanding any new concept. And the problems involved in learning about computer programming are no exception. One of the most valuable tools to aid understanding of this subject must be the cybernetic 'turtle'.

Many experts say that after BASIC, LOGO is the next most important high level computer language. If you are using LOGO, a turtle is the name given to the small, usually triangular, shape that draws lines on the screen. It is also the term for a little robot that can be programmed to move by the computer, to parallel the movements of the screen turtle. There are about 10 or 11 makes of turtle on the market and some have facilities to allow a pen to be attached to them so they can draw as they move.

London-based company, Valiant Design manufacture one such turtle, at just under £200. The company was founded just over three years ago. David Catlin, the Managing Director, is the man who designed the Valiant Turtle. He is a qualified engineer, and, before starting his company, handled contracts such as the testing and building of oil rigs. Consequently, he says, his first designs for the Turtle were not like the streamlined model that the company now produces — more like a heavy engineering project!



"Attractive, but practical design"

Valiant have designed their model as a stylised turtle. It has four legs, a head and a clear, green-tinted shell. Under the shell, the pentagonal control board is visible. From nose to tail it measures 250 mm, it is 250 mm wide and 140 mm high. The Turtle moves on wheels and has a socket in its underside to take a pen. The design although being attractive, has an important practical purpose; it is obvious which way the Turtle is facing, so there can be no confusion about whether it is moving forward, back, left or right.

Over 3,000 Valiant Turtles are currently in use in primary schools, where they have proved to be extremely successful in helping to teach young children about computers and programming. They are also useful to help explain abstract subjects such as mathematics and geometry. At the other end of the scale, Valiant Turtles have been used to aid the studies of university students. They have been used simply as graphical plotters by some people, and have been run with an IBM for CAD plotting, too.

The Turtle is operated by the easy to learn computer language, LOGO. This is now used in many primary schools and Valiant provide a comprehensive technical manual, and a book, that deals with LOGO and the Turtle. They also provide their own Turtle Graphics software which enables graphics procedures to be built and edited.

A complete three-part package is made up of a pack containing a Turtle, batteries, user manuals and literature, a pen and a screwdriver for adjusting the wheels; a pack containing the Communicator and power adaptor; and the Valiant interface kit comprising a disk or cassette with LOGO interface software and Valiant Turtle Graphics software, an instruction leaflet on running the Turtle with your machine and software, and a connection lead for the Communicator to your micro.

"Not limited by card controller"

The Turtle is remotely controlled by an infra-red transmitter that plugs into a port on the micro and sends signals to the Turtle, which are converted into action by the Turtle's logic control. Because it is remotely controlled, it is not limited in its range of activities, as are 'cord controlled' turtles. The Turtle has an operating range of six to eight metres from the transmitter. Transmission cannot be interrupted by someone inadvertantly standing in front of the beam — this is only possible by actually placing a hand close to the front of the transmitter to obstruct the beam.

Powered by 10 standard AA cell nickel cadmium rechargeable batteries, recharging the Turtle is simple — the power adaptor that comes with the package is just plugged into a socket provided on the Turtle. Two red 'eyes' on its head indicate their level of power. If they are brightly illuminated, the batteries are fully charged. But as they lose their charge, the

C64 USERS ARE GROWING UP!

PARALLEL PRINTER INTERFACE

Almost every printer on Commodore
Epson, Star, Brother, Oki, Juki, Seikosha etc.

- Can be plugged-in directly.
- Compatible with existing software.
- Uses no Memory.
- Does not need to be loaded.
- Does not need to be loaded.
- Expansion/Userports remain free.

44.95

OPTION: built-in 16kB printerbuffer **14.95**

80-COLUMN/GRAFIC CARD

Commodore 64

with improved wordprocessor

- 80 characters per line.
- Unlimited possibilities with Simon's Basic.
- Grafic/Textpossibilities.
- Adjustable line spacing.
- Digital clock.
- Upper line can be locked.

84.95

VIC-20 C64

- **32kB RAMPACK,** switchable, cased. — **53.45**
- **64kB RAMPACK,** idem, incl. highspeed Ramfile software. — **74.95**
- **40/80 COLUMNCARD,** your VIC-20 becomes professional.
- **MOTHERBOARD,** 2 slots, save your connector.
  5 slots, switchable, buffered.
- **EPROMCARD,** 2 type selectable sockets.
- **MOTHERBOARD,** 2 slots,
  5 slots, switchable, buffered.
- **COM-IN 64,** create your communication terminal.
- **EPROMCARD,** 2 type selectable sockets.
- **EPROMPROGRAMMER,** make your own programs on EPROM.
- **EPROM ERASER,** erases 4 EPROMS simultaneously.
- **ZENITH MONITOR,** 12", green/amber.

when also purchasing a 80-columncard

- **RELAYBOX**
- **POWERBOX**
- **INFRA-RED SYS**
- **SERVO SYS**

AVAILABLE AT YOUR LOCAL STOCKIST

ZERO ELECTRONICS

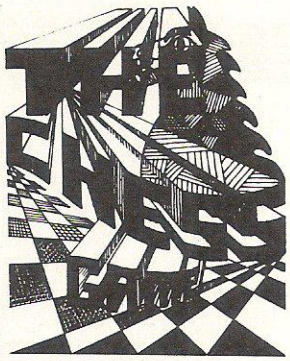
- Ask for details and order form
- P&P £ 1.50
- All prices include VAT
- Suppliers to school, universities and government dept
- All products guaranteed
- Please allow 14 days delivery

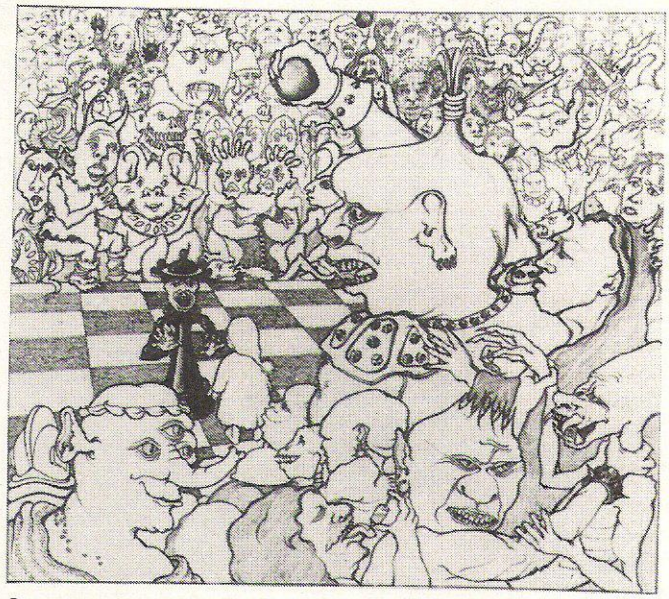
Overseas dealers required

149 KINGSTREET GT. YARMOUTH NR30 2 PA TEL :(0493)-842023

Coming soon.....

THE GAME OF 1985





Commodore 64 £7.95

BEST 3D ANIMATION EVER!

A stunningly original arcade adventure which is going to shock and delight the most demanding computer gamer.

New standards in excitement and quality are set. Do not miss THE Classic game of 1985.

Up till now MicroClassic has worked as a development house producing programs like the number one best seller Hunchback for Ocean

SPECIAL LAUNCH OFFER

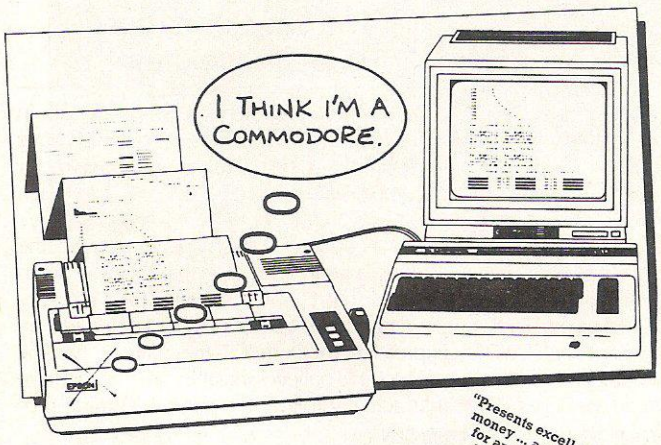
Be one of the first to get The Chess Game, and take advantage of a very special offer from MicroClassic. The Chess Game will be released in June 1985. To celebrate its release we are giving £2 off, that is an all inclusive price of just £5.95! But hurry, this offer ends on June 10th.

Micro Classic

MicroClassic . Greenfields . Priory Road . Forest Row . Sussex

---

An Epson in Commodore clothing



How many Commodore home computer owners, when faced with buying a printer, have longed to own an Epson but been put off by the problems involved? Firstly, it's not easy to connect the two together. Secondly, even when connected, it may be necessary to load driver software or the cartridge slot may be unusable. Finally Commodore-specific characteristics such as graphics and formatting commands will not be available.

Now Micro Control Systems have the solution. Just plug the Comprint circuit board inside the Epson, connect the cable supplied to the Serial I/O port on the Commodore computer and Hey Presto! The Comprint fools the Commodore into thinking it is working with a Commodore printer. All the features are there — total emulation. And it even provides a 2K buffer as well.

What's more all the additional features that have made Epson so successful, such as condenced print and other type styles, are accessible directly by the Commodore computer. For the business user the ability to use 15 inch paper (in the MX/RX/FX-100 range) and print a £ sign (or other Epson special characters) will prove invaluable.

So go on — spoil yourself. If you are the owner of a Commodore personal computer treat yourself to an Epson — and a Comprint of course!

"Presents excellent value for money ... a worthy purchase for any Commodore 64 or VIC 20" – PCN, January 12th, 1985

"This is one of the most versatile printer interfaces I have used ... a combination that will do almost anything you ask of it" – Commodore User, January 1985

"Undeniably an interface to look at" – Commodore Computing Int., May 1985

micro control systems

Available from:– **Price £61.99 inc VAT** Please add £1 P&P

CHROMASONIC
48 JUNCTION ROAD
ARCHWAY
LONDON N19 5RD
TEL 01-263 9493

OR

A-LINE COMPUTER SYSTEMS
1 CHURCH FARM LANE,
WILLOUGHBY, WATERLEYS
LEICESTER LE8 3UD
TEL (053758) 486

DISTRIBUTOR ENQUIRIES TO:–
MICRO CONTROL SYSTEMS LTD
TEL (0773) 769011

Turtle starts to 'blink' giving a clear indication that the batteries will need recharging. Even when the eyes are flickering, however, the Turtle will continue to run for some time, and you soon become able to judge how much longer it will run before you must recharge.

Batteries can be recharged about 350 times before they need replacing. As they approach the end of their life, they will run for progressively shorter periods. From one 'charge' you can expect about three hours continuous operation — usually enough for one school day. The Turtle features a fast charge facility, so if it is running low in the morning, a quick charge at lunchtime will see you through until the end of the day.

The Communicator does as its name implies — connects into the computer, sends out instructions to the Turtle and puts information up on the screen. With certain versions of LOGO, up to four Turtles at a time can be operated from one computer. The Turtle can be used with most micros, such as Commodore, BBC, Apple, IBM and Spectrum. If you have more than one type of computer, Valiant's three-part package enables you to purchase just the elements that you need, not a complete package.

The control board on the Turtle is covered by a clear polycarbonate 'turtle shell', and a red light on the control board and one inside the Communicator switch on and off continuously to give a visible indication that instructions are being transmitted and received. The Turtle is moved by two independent stepper motors which give high accuracy of movement. There are two U-shaped slots in the Turtle's base which give access to screws on the wheel hubs. Using the screwdriver that comes with the package, it is a simple task to adjust the wheels to make sure that the Turtle performs with maximum accuracy.

"Draw with standard Berol pens"

Sited in the Turtle's 'undercarriage' is a pen that can be raised or lowered by computer command. This allows you to draw with the Turtle. The pen is easy to change — you just turn the Turtle upside down, remove one pen from the special socket that is positioned between the wheels, and insert another. It uses a standard Berol pen that comes in twelve colours, and these are available from most stationers.

The Turtle is robustly built, as you would expect from a piece of equipment that is used in schools, and if you look after your Turtle it should last for years. If anything should go wrong with a Turtle, Valiant will usually send a replacement, but they will soon be offering a service and repair facility.

Operation should take place on a firm, flat surface, ideally on the floor because there is a danger of the Turtle running off a table top. The floor surface should be clean and free from fluff and dust; preferably not a thick piled carpet, because fluff can become entangled round the Turtle's wheels. If this does happen it can usually be removed without too much trouble, but is best avoided.

Photo courtesy of Wiltshire Times

One section of the User Guide, part of the literature that comes with the Turtle package, has a useful section headed Trouble Shooooting. It deals with common problems that could arise with Turtles, and offers a range of possible causes and remedies. It is a very useful idea, because nothing is more frustrating than a simply remedied technical 'hitch' holding up operation of equipment.

"Helpful advice"

If your Turtle behaves erratically, the booklet suggest seven causes. For example, it could be due to the Communicator being incorrectly positioned, in which case you should remove any obstruction and check the section on operating equipment in the booklet. Or it could be caused by low battery voltage, so the batteries should be recharged.

The literature that accompanies the Turtle is clear and informative. The User Guide booklet that has the fault checking system, is a basic handbook. It covers all the things that you may need to know about operating the Turtle. The other booklet, entitled Penup contains a collection of articles for children, parents and teachers. It introduces LOGO and gives practical ideas for activities with the Turtle.

Some of the starting activities that are suggested to get you used to using your Turtle are teaching it to draw simple shapes, such as a triangle. The LOGO procedure of this is simple, and the commands used are PD which lowers the pen, FD forward and RT right. The Turtle moves in units of 1cm, but can be reprogrammed to move in units of 1 mm, 1 inch or 1 metre. It turns in units of 1 degree.

So, first type PD which lowers the pen. Then
FD 100 RT 120 FD 100 RT 120 FD 100 RT 120
or REPEAT 3 [FD 100 RT 120]
The Turtle can be taught to draw that triangle by typing
TO TRIANGLE
REPEAT 3 [FD 100 RT 120]
END
Whenever you type TRIANGLE, the Turtle will draw a triangle. The triangle can then be used to build larger procedures.

Games that can be played with the Turtle are suggested, such as Demolition Turtle, where you build a small block of light material into a tower and direct the Turtle to knock it down. Or Racetrack, where a track is marked out and performances timed or measured by the number of commands needed to complete the circuit.

A four-page booklet for younger users is called Turtle Talk. It introduces the concept of mazes, with snippets of information about historical mazes, and the maze story of Theseus and the Minotaur. A cartoon story leads the children into the idea of manoeuvering their Turtle through a maze.

Valiant are currently working on a project to produce a series of 'micro world' packages which are designed to allow the Turtle to be used in a number of exciting ways. They hope to have the first one available by the late summer.

"The only limitation is your imagination"

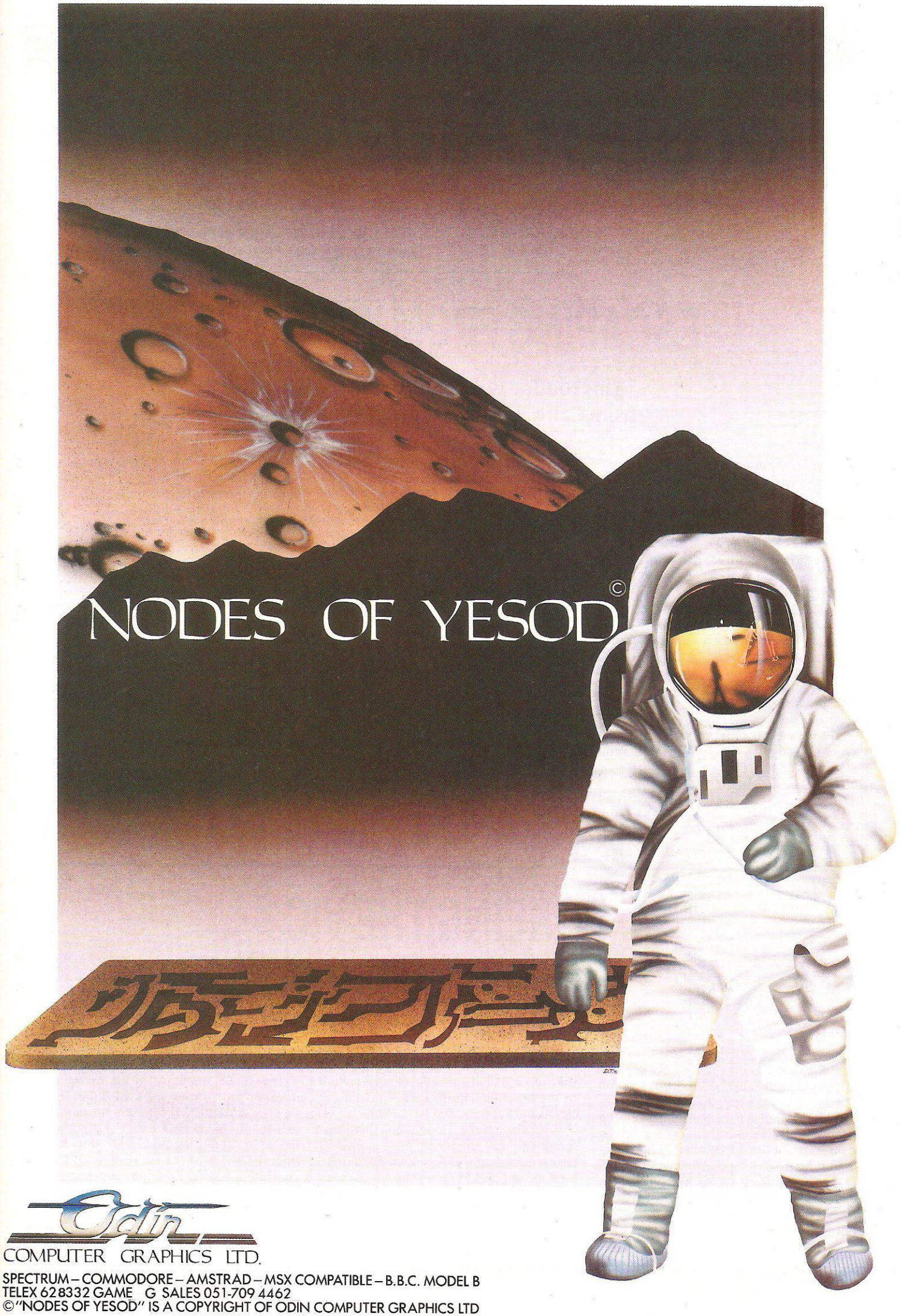
The home computer is a common item in many households, and most schools now have computers. There is a growing need for everyone, with computers becoming so much a part of everyday life, to be 'computer literate'. As far as young children are concerned, the Turtle is a good educational aid. David Catlin believes that LOGO and the Turtle are very powerful tools for learning and provide an expressive medium for the natural learning process. He believes that they are one medium that actually follow the natural learning process.

For any user, the Turtle is not only fun, but a useful way of understanding computers, programs and robots. With the Turtle you can start with a simple program and build on this to develop a more complex program. In this way, the user never starts at a level that is too complicated for them to handle.

There are many reasons why people will find Turtles useful. They may be used simply as a graphics tool, or as a tool for learning.

A Turtle and LOGO are tools which help the user to learn, painlessly. The only limitation to a Turtle's uses is your own imagination.

Contact: Valiant Designs Ltd, Park House, 140 Battersea Park Road, London SW11 4NB. Telephone: 01-720 3947/627 1351/627 0470.



Odin
COMPUTER GRAPHICS LTD.

SPECTRUM – COMMODORE – AMSTRAD – MSX COMPATIBLE – B.B.C. MODEL B
TELEX 628332 GAME G SALES 051-709 4462
©"NODES OF YESOD" IS A COPYRIGHT OF ODIN COMPUTER GRAPHICS LTD

Foreign Aid

Readers from as far as Egypt offer advice to fellow programmers

ESCAPING FROM WINDOWS

This routine was sent to us all the way from Cairo, Egypt by David Goodfellow

I was very interested in the routine to create windows on the C16 and Plus/4 (Hints and Tips, New Year issue). The only problem was that although this created a window, it does not allow you to escape from the window or change its size.

This short program is a demonstration of how the window size can be changed from within a program.

When the program prints a series of reversed spaces in varying shades to fill the normal screen, it then opens the first window and changes colour. The print routine is then repeated, but as the print line is shorter, the pattern continually changes and gives some interesting movement effects.

The secret of the escape from the window is the double (home) in the print statement on Line 85.

If Line 89 is omitted, then the window does not clear between each change and a better movement effect is obtained.

NB. In this version I have changed the symbol in the CL$ string in Line 63020 from cursor left to cursor right.

```
5 COLOR0,4,3
10 Z=2:C=0:X=5:Y=5:X1=34:Y1=20
20 FORI=1TO1000
30 COLOR1,Z,C
40 PRINT"■ ";
50 C=C+1:IFC>7THENC=0
60 NEXT
70 Z=Z+1
80 IFZ=3THENGOSUB63000
85 IFZ>3THENY=Y+1:X=X+1:X1=X1-1:PRINT"■■":GOSUB63000
89 PRINT"□"
90 GOTO20
63000 :
63010 :
63020 CL$="■■■
```

books which would have explained this problem, I am sure that there are also people like myself, who read your magazine and would find this information useful.

Equally useful is a small simple program that I thought up which displays a character on screen, starting at the top left, and also displays the appropriate Poke number. Line 4 halts the program until the space bar is hit, then the program will display the next character in its new sequencial position, and the new Poke number. This is very helpful in finding a desired position on screen, and the appropriate Poke number very quickly, since all that is necessary is to hold the space bar down until the character reaches the chosen screen position. There it is for the user to actually see, and the Poke number too! I have also drawn-up a screen memory map showing the new locations using the expansion, but find my little program far more efficient and speedy.

NB The screen must be black for this program (POKE 36879,9)

```
1 FORX=4096T04601
2 POKEX,81
3 PRINT"POKE"JX
4 GETA$:IFA$=""THEN4
5 PRINT"□"
6 NEXTX
```

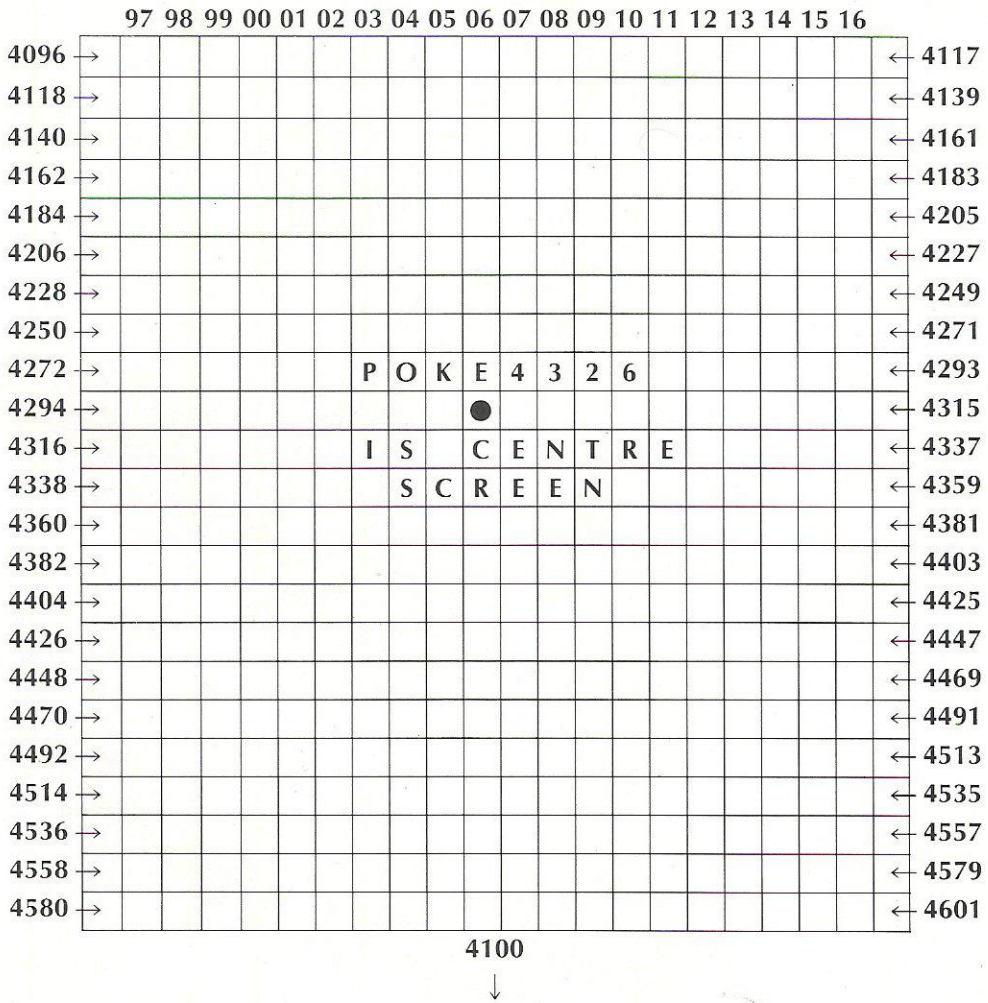
The above program displays a ball character on screen, in a position which is appropriate to the POKED memory location number, which is also displayed.

Line 4 halts the program, until the space bar is hit. Then the program will display the next ball position, and poke No.

This is useful for deciding where to best place a character on screen, and since the poke No is also displayed, saves a lot of time working it out from the chart map.

To quickly find the desired character position, just hold the space bar down, which causes the "FORX" loop to make rapid passes.

VIC 20
SCREEN MEMORY LOCATION MAP
WITH 16KB SWITCHABLE RAM
EXPANSION



CCI

BRITISH SOFTWARE PRESENTS

OPERATION SWORDFISH

Commodore 64

FOR THE FIRST TIME A TEAM OF BRITAINS' BEST PROGRAMMERS HAVE UNITED TO BRING YOU THE ULTIMATE

WAR GAME

British Software, 85 Greenway, Chislehurst, Kent, England
Tel. 01-467 0365 Trade Enquiries Welcome

The art of algorithms

David Bowdrey explains a further area of Basic programming, this month focusing on algorithms

An algorithm is a set of rules for getting a specific output from a specific input. Each step must be so precisely defined that it can be translated into a computer statement.

The term "algorithm" comes from the name of a 9th century Persian mathmetician, al Khowarizmi. His book of arithmetic methods provided a foundation for European scientific development. However, algorithms have come to mean more than arithmetic solutions. Algorithms are central to computer programming.

Developing Algorithms

The first step in developing an algorithm is to define the problem in terms of the SPECIFIC output and the SPECIFIC input. The use of the stronger term of problem should focus the mind to a more searching review than merely attempting to meet a requirement. Likewise, it is often easier to solve a problem by focusing on the desired result (the output) first and then defining the inputs required to give that desired result.

A programmer requires a low dissonance threshold, the awareness of a difference between what is perceived to be and what is supposed to be. All too often in problem definition the initial perception of the problem is taken to be the problem without further analysis. Subsequent development of the solution is then based on the entrenched perception. The remedy is to ensure that no solutions are attempted before a detailed analysis of the problem has been completed.

Whenever possible the definition of the problem should be sounded out with others who have an involvement or knowledge of the problem area. Particularly with those who have the problem! In some instances such discussions may reveal that a third party has the problem and not the individuals pondering over it. Or it may reveal that the problem is a ghost raised by misinterpretation of a given requirement.

In summary, ensure that the problem exists and that it is clearly defined before attempting a solution.

Arithmetic Algorithms

These algorithms are the ones most easily overlooked as being such. C=A+B is an algorithm wherein the two values declared as A and B are summed to give the total declared as C. The primary danger in developing (or employing from a library) an arithmetic algorithm is the selection of the wrong arithmetic function. With all arithmetic work in computer programming it is essential to carry out an example calculation in longhand to prove the suitability of the formulae used. Most especially when logic comparisons are employed. To meet specific output requirements of an algorithm particular attention must be paid to computer (in) accuracy!

Searching Algorithms

These algorithms encompass what is probably the most active area of computer usage. Most non-trivial programs have an element of searching. The art of conducting an efficient search is a field of study in its own right. Search techniques range from the simple sequential search through a given list, via binary searches to fairly complex hash searches. The approach adopted is very much dependent upon the quantity of data, the variability of the data and the operating characteristics of the computer on which the search is being carried out.

The sequential search is the most straight forward in terms of programming, changes in the data quantity and the variability of the data. It is conducted in the manner of a person reading down a list looking for a particular detail. Each item is read in turn until the required one is found or the list is exhausted. Programming such a procedure is quite simple. A requirement often overlooked with sequential searches is an end-of-data marker. Without positive recognition that the data list has been exhausted the machine may well crash or become stuck in a loop,

However, a sequential search has a massive limitation in terms of the time to conduct the search once the data exceeds (say) 100 items. Despite this limitation, where the data has no order the sequential search is the only option. In such circumstances the sequential search can be tuned by firstly searching for a key word or letter and then making comparisons of whole data blocks.

The binary search splits the data into two sections, determines in which portion the required data lies, splits that portion into two and so on until the item is identified, or determined to be non-existent. (NB. The term split into two portions is used rather than halved. Use the INT (quantity of data /2), which is not an exact half in every case.) The binary search has a large time advantage over the sequential search for the longer lists of data (in that the maximum number of comparisons is the number by which 2 is raised to just exceed the quantity of data being searched, eg. 1000 items will require only 10 comparisons as 2 to the power of 10 is 1024). The binary search requires that the data list is ordered in some non-random manner (a, b, c, . . . 1, 2, 3, . . . n,n−1, n−2, n−3, . . . etc.). It also requires that any changes to the data respect the ordering system adopted. Insertion of new data can prompt a major shuffling of data which may have a larger time penalty than a sequential search of the same data!

Hash searching is the form of search that attempts to combine the best of both sequential and binary search techniques. In essence, the data is ordered by first encoding a key value for each item using an arithmetic algorithm of varying levels of complexity according to the range and nature of the data. (eg. adding the value of the characters, a=1, b=2, c=3, etc., and then truncating the sum to place the numeric result within the range of the quantity of data plus an operating margin.) Then using the number so "hashed" as a pointer to a position from where space may be found in the list to store the item. A search is conducted by hashing a pointer for the subject of the search, using the same algorithm which was used to store the data in the first instance, and then using that pointer as the start position of the search.

Hash searching is growing in importance as the techniques involved are becoming better understood and, more importantly, the size and complexity of the data being searched are growing.

Sorting Algorithms

Sorting algorithms are more time sensitive than the searching algorithms. Once again the time factor is highly dependant upon the nature of the data, its quantity and the computer on which the sorting is being done.

When you have a sorting problem to program you should first define as accurately as possible the nature of the data to be sorted. The next step is to research the well established algorithms to see if one will suit your needs. Modification and refinement of the established sorting algorithms will meet most programmer's needs. When you have a special case then by all means devise a new method of sorting. If you are successful and the algorithm proves to be original then you may be entering the computing hall of fame!

CCI

Keep it in line

Give your programs a clear, structured appearance with this program to automatically generate lines, but with a difference, from Mike Hart. Versions are given for both the 64 and the VIC

Here are a couple of routines which essentially both do the same thing — that is they provide a facility for automatically generating line numbers which is a very useful utility when writing or key-ing in a long program. Routines like this have been published in the past but AUTOLINER has a difference — it not only generates a line number but places a colon (:) after it. The provision of a colon allows you to indent FOR-NEXT loops or any other section of code without the interpreter automatically removing the spaces after the line number. In this way, your listings can exhibit a nice clear structure which advocates of structured programming can admire.

Why TWO versions?

Although both versions of AUTOLINER achieve their effect in a similar way ie by placing the next line number in the keyboard buffer, their mode of operation is quite different and you may have a preference for one or the other.

AUTOLINER-SPACE works by manipulating the input buffer and this is activated by typing a space (obviously in direct mode) after which the new line number plus colon will automatically appear. This is a nice simple system which you will find very quick and easy to operate. However, many AUTO techniques generate the next line automatically once the previous line has been sent by pressing RETURN.

AUTOLINER-RETURN works this way as well and in this case it is the IRQ which is diverted to sense a RETURN This has the advantage that you do not even have to type a space, but the slight disadvantage that deleting lines can be difficult as pressing RETURN generates the next line! There is a means of turning it off by typing SYS 700 — an easy number to remember.

It is left to the reader to try both versions and use whichever they feel most comfortable with.

How to use AUTOLINER

The Syntax for both versions of the program is the same ie type

SYS(680) Firstline,Increment

where Firstline is any number from 0-63999 and Increment is any number from 0-255. Note that there is *no* comma after the SYS(680) part of the call.

This particular part of memory has been chosen as it is common to the C64 and the VIC and is not likely to conflict with inputting or saving programs via the cassette buffer. Because the space in this area is so limited the routines have been stripped down to their bare essentials and quite a few shortcuts taken to make both of them fit in the space available.

A disassembly is provided for both, so that interested programmers can see how the routines work and possibly learn a trick or two to incorporate into their own programs.

AUTOLINER-SPACE

```
1 REM   ***  AUTOLINER-SPACE ***
2 :
3 REM    **    BY MIKE HART  **
4 :
5 FOR J=680 TO 766: READ X:T=T+X
6 POKE J,X:NEXT J:READ C
7 IF T<>C THEN PRINT "ERROR!":END
8 PRINT "O.K.":END
9 :
10 REM SYS(680) FIRSTLINE,INCREMENT
11 :
12 REM SPACE BAR GENERATES LINE NOS...
13 :
20 DATA 169,192,141,20,3,169,2,141
21 DATA 21,3,32,235,183,165,20,133
22 DATA 251,165,21,133,252,134,253,96
23 DATA 166,211,224,1,208,54,165,197
24 DATA 201,60,208,48,202,134,211,166
25 DATA 251,165,252,133,98,134,99,162
26 DATA 144,32,73,188,32,223,189,185
27 DATA 255,0,240,6,153,118,2,200
28 DATA 208,245,169,58,153,118,2,132
29 DATA 198,24,165,253,101,251,133,251
30 DATA 144,2,230,252,76,49,234
31 DATA 12172
READY.
```

NEW

– Commodore 64 –

TURBO-BREAKER

AT LAST, Transfer Turbo games to Disk
Blank screen, Flashing and picture screen turbos by most software houses
Easy to use.....£10.95

******** TURBO-SAVER *********

Make easy Turbo back up copies of your slow load games, no user knowledge needed, easy to use.....£8.00

******* TRANSFER - MK2 ******

Transfer most slow load games to Disk
Simple to use, and needs no user knowledge, or skill.....£8.00

******* DISK - TURBO **********

Make your disk games load faster, 45secs instead of 2mins, does no harm to your drive.....£8.00

********DISKOPY **********

A Selective disk copier, fast and very easy to use.....£7.00

******* DISK - DOCTOR *********

A Disk editor, alter any part of the disk, recover a scratched file£8.00

ARROW MICRO SERVICES

20 Portmeadow Walk
London SE2

BACKUP PROBLEMS SOLVED

Tape Transfer Dual Cassette Interface

TRIGSOFTS DCL1 interface enables the quick and easy creation of back-up copies of all your turbos, m/code, data files, etc. If your program can be loaded then it will be transferred exactly on a second datasette. You will have noticed various competitors have copied our original idea so to encourage you to order from us you can buy RESET1 for only £1 if bought with a DCL1. Price £10.00 order as DCL1 (for CBM64 or VIC 20).

DCL4 This unit performs all of the functions of the DCL1 but has the added advantage of having two extra 3.5mm sockets for connecting direct to a normal audio cassette recorder. So you can back-up your tapes without going to the expense of buying a second datasette. It is possible with this interface to connect two standard datasettes and two audio decks at the same time, allowing you to make three copies in the time it takes to load the original. Price £18 order as DCL4 (CBM64 or VIC 20).

RESET1 this small reset switch plugs into the serial port of your computer or disk drive and allows you to reset it without destroying your program. A program is included with the switch which will recover any basic program and the instructions include tips on how the 64 operates after reset helping you recover from crashes. Price £3 including program and tips etc, order as RESET1 (for CBM64 or VIC 20).

BACKUP PROGRAM. This excellent program is recommended for anyone who only has access to one datasette. It will transfer multi-part programs from tape to tape or tape to disk. Menu driven with prompts even while the cassette is loading. Available on tape for CBM64 only. Price £4.50 order as CVCOPY.

We also produce hardware etc for other machines, eg printer cable MSX, Level metering system for Audio machines. Send 17p stamp and address label for details stating your machine and requirements.

All prices are full inclusive (export add £1 postage) and all items guaranteed for one year. Also all hardware is subject to an additional money back guarantee so that if you return any hardware undamaged, within 10 days we refund your purchase price minus postage/packing, so you just cannot lose by ordering from us. Please note we have now moved to larger premises so please send all orders there.

TRIGSOFT, (dept CCI), 161-163 Rutland Street, GRIMSBY, South Humberside, DN32 7ND.
Tel: Grimsby (0472) 48304.

COMMODORE UTILITY DISK COMMANDER

A really *powerful* disk utility, incorporating a range of excellent programs, "fastcopy" takes just *three minutes* to read and write a whole disk including formatting. "Diskclone" copies entire disk including errors *automatically*. *"Error editors"* reads disk for errors and writes errors, *20, 21, 22, 23, 27 and 29. "Filecopy"* allows selective copying of programs from disk directory. Other features include, disk formatting in 11 seconds, track repair, scratch, validate, change device number, plus much more. Also a useful disk turbo load program, load your favourite programs at more than three times the normal speed – menu driven.
All this for just £14.95 incl. P&P.

PERSONAL BANK MANAGER

An excellent personal finance program, includes search facilities. By month, cheque, amount etc. True bank reconciliation etc. Full print out of statement etc. Includes a useful additional program for calculating true rates of interest on personal loans, mortgages etc.
All this for just £9.95 incl. P&P. Tape or Disk.

ADD-MAN ACCOUNTING SUITE

Including sales ledger, purchase ledger, journal, VAT, cash book, profit & loss, etc, output to printer, disk or cassette £14.95 incl. P&P.

VISA & ACCESS accepted, just telephone with your account number

Galaxy Software

"Dept. C.C.I." 15 Dicconson Terrace, Wigan, Lancs
Telephone: 0942 495359

WARP*5

GET A LOAD OF THIS!!!
£9.95
inc. p/p

WARP*5 will speed loading from your 1541 by over 5 TIMES FASTER.
Example: A 154 BLOCK program which normally loads in 1:40 will load with WARP*5 in 18 SECONDS!!
WARP*5 also includes enhanced DOS commands for easier use.
Also includes a bonus program — BOOT MAKER
Convert your machine-code programs to AUTO-RUN-WARP-LOAD from disk.

TOOLKIT MK.2

NOW THIS BEST SELLING COLLECTION OF 1541 DISK UTILITIES IS EVEN BETTER!!

INCLUDES:—

* FAST DISK COPIER * EVEN FASTER DISK COPIER
* LOADING ADDRESS RELOCATOR * AUTO RUN MAKER
* DOS CHANGER * FILE LOCK/UNLOCK * DISK DOCTOR
* DISK DRIVE MONITOR * DISK LOG * FILE RECOVERY
* COMPACTOR * FILE COPIER * DISK ERROR LOCATOR
* DISK ERROR MAKER — MAKES READ ERRORS 20, 21,22,23,27 & 29 WHICH ALLOWS YOU TO BACKUP ALL YOUR VALUABLE PROTECTED DISK SOFTWARE.

ONLY £17.95 inc. p/p

Upgrade available for original TOOLKIT owners.
Phone or write for details.

Overseas orders please add £1.00

Send cheque or P.O. to:
MPS SOFTWARE
36 ALEXANDRA GROVE, LONDON N4 2LF
01-800-3592

AUTOLINER-SPACE DISASSEMBLY

```
READY.

B*
   PC  SR AC XR YR SP
.;0008 31 4F 4F 00 F6
.
02A8 A9 C0      LDA #$C0
02AA 8D 14 03   STA $0314
02AD A9 02      LDA #$02
02AF 8D 15 03   STA $0315
02B2 20 EB B7   JSR $B7EB
02B5 A5 14      LDA $14
02B7 85 FB      STA $FB
02B9 A5 15      LDA $15
02BB 85 FC      STA $FC
02BD 86 FD      STX $FD
02BF 60         RTS
02C0 A6 D3      LDX $D3
02C2 E0 01      CPX #$01
02C4 D0 36      BNE $02FC
02C6 A5 C5      LDA $C5
02C8 C9 3C      CMP #$3C
02CA D0 30      BNE $02FC
02CC CA         DEX
02CD 86 D3      STX $D3
02CF A6 FB      LDX $FB
02D1 A5 FC      LDA $FC
02D3 85 62      STA $62
02D5 86 63      STX $63
02D7 A2 90      LDX #$90
02D9 20 49 BC   JSR $BC49
02DC 20 DF BD   JSR $BDDF
02DF B9 FF 00   LDA $00FF,Y
02E2 F0 06      BEQ $02EA
02E4 99 76 02   STA $0276,Y
02E7 C8         INY
02E8 D0 F5      BNE $02DF
02EA A9 3A      LDA #$3A
02EC 99 76 02   STA $0276,Y
02EF 84 C6      STY $C6
02F1 18         CLC
02F2 A5 FD      LDA $FD
02F4 65 FB      ADC $FB
02F6 85 FB      STA $FB
02F8 90 02      BCC $02FC
02FA E6 FC      INC $FC
02FC 4C 31 EA   JMP $EA31
02FF 60         RTS
```

AUTOLINER-RETURN DISASSEMBLY

```
READY.

B*
   PC  SR AC XR YR SP
.;0008 30 4F 4F 00 F6
.
02A8 20 EB B7   JSR $B7EB
02AB 86 FB      STX $FB
02AD A9 C7      LDA #$C7
02AF 8D 04 03   STA $0304
02B2 A9 02      LDA #$02
02B4 8D 05 03   STA $0305
02B7 A6 14      LDX $14
02B9 18         CLC
02BA 90 1C      BCC $02D8
02BC A9 7C      LDA #$7C
02BE 8D 04 03   STA $0304
02C1 A9 A5      LDA #$A5
02C3 8D 05 03   STA $0305
02C6 60         RTS
02C7 AD 00 02   LDA $0200
02CA 48         PHA
02CB 20 7C A5   JSR $A57C
02CE 68         PLA
02CF C9 3A      CMP #$3A
02D1 B0 F3      BCS $02C6
02D3 A5 FB      LDA $FB
02D5 65 14      ADC $14
02D7 AA         TAX
02D8 A5 15      LDA $15
02DA 69 00      ADC #$00
02DC 86 63      STX $63
02DE 85 62      STA $62
02E0 A2 90      LDX #$90
02E2 38         SEC
02E3 98         TYA
02E4 48         PHA
02E5 20 49 BC   JSR $BC49
02E8 20 DF BD   JSR $BDDF
02EB B9 FF 00   LDA $00FF,Y
02EE F0 06      BEQ $02F6
02F0 99 76 02   STA $0276,Y
02F3 C8         INY
02F4 D0 F5      BNE $02EB
02F6 A9 3A      LDA #$3A
02F8 99 76 02   STA $0276,Y
02FB 84 C6      STY $C6
02FD 68         PLA
02FE A8         TAY
02FF 60         RTS
```

AUTOLINER-RETURN

```
1 REM      *** AUTOLINER-RETURN ***
2 :
3 REM       **   BY MIKE HART    **
4 :
5 FOR J=680 TO 767:READ X:T=T+X
6 POKE J,X:NEXT J:READ C
7 IF T<>C THEN PRINT "ERROR!":END
8 PRINT "O.K.":END
9 :
10 REM SYS(680) FIRSTLINE,INCREMENT
12 :
13 REM SYS 700 TO TURN 'OFF'
14 :
20 DATA 32,235,183,134,251,169,199,141
21 DATA 4,3,169,2,141,5,3,166
22 DATA 20,24,144,28,169,124,141,4
23 DATA 3,169,165,141,5,3,96,173
24 DATA 0,2,72,32,124,165,104,201
25 DATA 58,176,243,165,251,101,20,170
26 DATA 165,21,105,0,134,99,133,98
27 DATA 162,144,56,152,72,32,73,188
28 DATA 32,223,189,185,255,0,240,6
29 DATA 153,118,2,200,208,245,169,58
30 DATA 153,118,2,132,198,104,168,96
31 DATA 10018
READY.
```

VIC Version

The versions presented here are for the C64 by default. It only takes a few changes to convert them for use on the VIC. The author has tried out the routines on both machines and can vouch that they work on both!

AUTOLINER-SPACE Line Number, Byte		Changes for VIC-20 From	To
21	5	183	215
24	2	60	32
26	4	188	220
26	7	189	221
30	7	49	191
31	(Checksum)	12172	12382

AUTOLINER-RETURN Line Number, Byte		Changes for VIC-20 From	To
20	3	183	215
23	3	165	197
24	6	165	197
27	8	188	220
28	3	189	221
31	(Checksum)	10018	10178

BUSINESS SOFTWARE

PAYROLL for Commodore 4032, 8000 series & 64
This must be the most comprehensive payroll for its price. Very easy to use. Hourly, weekly and monthly basic, 7 overtime/piecework rates, 4 pre-tax adjustments incl. pension — SSP, 6 after tax, NI, all tax codes & bands. Deduction card printout. Printed payslips or plain paper. This payroll can be adjusted by the user when tax rates change. (no SSP on 4032)
SPECIAL BUDGET OFFER — £80 incl. VAT April and May only.

INTEGRATED ACCOUNTS FOR 8032/96
Purchase ledger, sales ledger, invoicing, stock control, statements, daybook, aged debtor, address labels, payroll (as above), nominal ledger etc. etc.
£460.00 incl. VAT.

LOW COST BARGAIN PACK for Commodore 64/ 3000/4000/8000
Simple purchase and sales system with invoices laid out to your own design, address label printing, stock control and nominal ledger for small businesses.
Full price £92.00 incl. VAT
Special price £52.00 incl. VAT (only one per customer at this price).

Full refund on any returned with 21 days. Write or phone for details & complete list.

Electronic Aids (Tewkesbury) Ltd.
62 High Street
EVESHAM
Worcs. WR11 4HG

Telephone
0386 49339
or 0386 831020

Superbase 64 TRANSFORMS THE COMMODORE 64 INTO A FULL FEATURED PROFESSIONAL DATABASE SYSTEM, WITH UP TO 1000 CHARACTERS PER RECORD ON UP TO 4 SCREENS... AND UP TO 128 ITEMS PER RECORD, DEFINABLE AS KEY, TEXT, NUMERIC, CONSTANT, RESULT OR DATE, IN FILES OF UP TO 16M CHARACTERS! SUPERBASE 64 EVEN HAS A SPREADSHEET AND CALCULATOR CAPABILITY, CALENDAR FUNCTIONS, EASY INPUT FROM WORDPROCESSOR OR DATA FILES, BOTH MENU-DRIVEN AND PROGRAM OPTIONS, SORTING/SEARCHING, FULLY DEFINABLE OUTPUTS... SUPERBASE 64 IS ESSENTIAL IF YOU WANT THE MOST FROM YOUR 64! SUPPLIED ON 1541 DISK WITH EXCELLENT TUTORIAL/REFERENCE MANUAL PLUS AUDIO LEARNING TAPE... AND THERE'S A WIDE CHOICE OF "GET-YOU-GOING" APPLICATION STARTER PACKS AT ONLY £9.95 EACH!
OUR PRICE ~~£99.95~~ £88.00

Jetpack YOUR PROGRAMS WILL REALLY TAKE OFF WITH DTL JETPACK! FULLY COMPATIBLE WITH BASIC, JETPACK COMPILES BASIC PROGRAMS INTO MACHINE CODE, RUNNING UP TO 25 TIMES FASTER AND EVEN USING UP TO HALF AS MUCH MEMORY... AND IT ACCEPTS EXTENDED BASIC AND MACHINE CODE ROUTINES TOO!
OUR PRICE (DISK) ~~£39.95~~ £35.95

FIGARO 64 AT LAST, AN EASY-TO-USE YET POWERFUL NUMERIC DATABASE, WITH A FULL RANGE OF BUILT-IN STATISTICAL FUNCTIONS, PLUS FORECASTING, CALCULATION AND MIXED HI-RES/TEXT GRAPHICS. SUPPLIED ON DISK WITH CLEAR, COMPREHENSIVE MANUAL, FUNCTION-KEY OVERLAY, DEMO PROGRAM.
OUR PRICE ~~£86.25~~ £75.00

Vizawrite 64 VIZAWRITE 64 IS A HIGH-PERFORMANCE, LOW-COST WORD PROCESSOR, WITH ON-SCREEN FORMATTING, THAT TAKES FULL ADVANTAGE OF THE 64'S COLOUR, GRAPHICS AND MEMORY FEATURES... AND SUPPORTS VIRTUALLY ANY PRINTER! WITH A COMPREHENSIVE AND EASY-TO-FOLLOW USER REFERENCE MANUAL, VIZWRITE IS THE ULTIMATE PERSONAL COMPUTER WORD PROCESSOR! AVAILABLE ON CARTRIDGE (~~£89.95~~ £78), DISK (~~£79.95~~ £68) OR WITH VIZASPELL (~~£99.95~~ £85)

*** WANT IT TOMORROW? *** CALL US TODAY! *** ON 01-546-7256

VIZASPELL	(DISK)	~~£59.95~~ £49.95	MULTIPLAN (US)	(DISK)	~~£79.95~~ £67.95
VIZASTAR	(DISK)	~~£99.95~~ £89.00	PRACTICALC	(DISK)	~~£44.50~~ £39.95
DTL JETPACK	(TAPE)	~~£14.95~~ £13.95	PRACTICALC	(TAPE)	~~£39.95~~ £34.95
EASYSCRIPT	(DISK)	~~£75.00~~ £65.00	MASTER 64	(DISK)	~~£115.00~~ £64.95
EASYSPELL	(DISK)	~~£50.00~~ £41.95	THE TOOL	(CART)	~~£49.95~~ £39.95
SIMON'S BASIC	(CART)	~~£50.00~~ £41.95	HOMEBASE 1-4	(DISK)	..... £17.95
ASSEMBLER 64	(DISK)	~~£24.95~~ £21.95	PRINTLINK 64 INTERFACE		..... £29.95

PRICES INCLUDE 15% VAT AND ARE CORRECT ON GOING TO PRESS. ORDER BY POST OR PHONE, USING CHEQUE, ACCESS/BARCLAY CARD OR OFFICIAL ORDER. DESPATCH IS BY SAME-DAY 1ST CLASS POST, PRE-PAID ORDERS FREE. PRODUCT DATA AVAILABLE ON REQUEST. REF A30

Calco Software

LAKESIDE HOUSE, KINGSTON HILL, SURREY, KT2 7QT. TEL 01-546-7256

SOFTAID

Feed the World

SINCLAIR SPECTRUM

SPELLBOUND	– BEYOND
STARBIKE	– THE EDGE
KOKOTONI WOLF	– ELITE
THE PYRAMID	– FANTASY
HORACE GOES SKIING	– MELBOURNE HOUSE/PSION
GILLIGANS GOLD	– OCEAN
ANT ATTACK	– QUICKSILVA
3D TANK DUEL	– REALTIME
JACK & THE BEANSTALK	– THOR
SORCERY	– VIRGIN

10 Top titles on one cassette! only

£4.99

Features the Hit Single 'Do they know it's Christmas?' BAND-AID

COMMODORE 64

GUMSHOE	– A & F
PITFALL	– ACTIVISION
STARTRADER	– BUG BYTE
KOKOTONI WOLF	– ELITE
CHINA MINER	– INTERCEPTOR
GILLIGANS GOLD	– OCEAN
FRED	– QUICKSILVA
GYROPOD	– TASKSET
FALCON PATROL	– VIRGIN
FLAK	– U.S. GOLD

Available from multiple retailers and specialist computer stores

All proceeds to The Bob Geldof Band-Aid Ethiopian Appeal Fund.

It makes sense...

TO HAVE YOUR OWN ELECTRONIC DIARY IN WHICH YOU CAN FILE ANY DATA WHICH IS ESSENTIAL TO YOU, THE SOFTWARE TEAM THAT DESIGNED AND DEVELOPED EASY FILE HAS NOW PRODUCED SUCH A DIARY.

Desk Diary £29.95 (Disk + Manual) for your Commodore 64

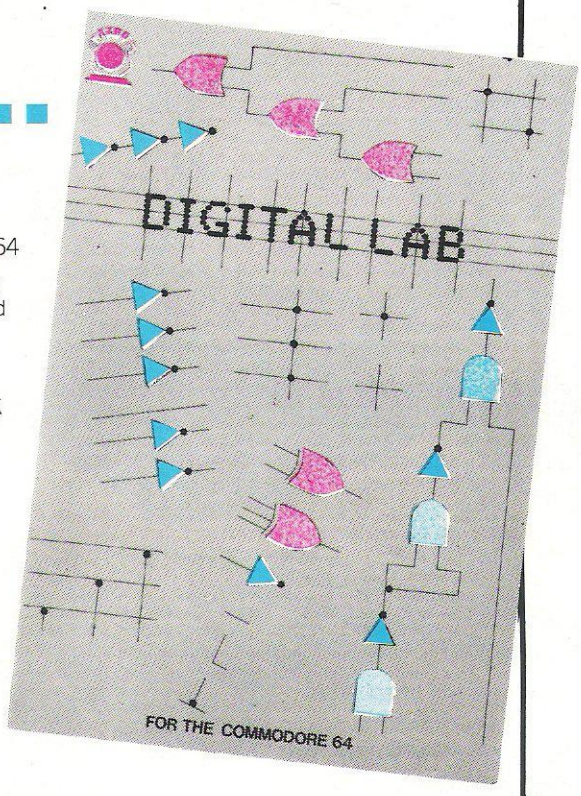
Have you ever wished you had a Diary which you could alter at will to suit your requirements year after year? If you have then DESK DIARY could be the Diary you've always wanted.

DESK DIARY is a powerful Diary Information Management System. It features Powerful PASSWORD protection for the entire DIARY, MENU driven routines and well defined screens.

With DESK DIARY you can:—
• Protect your DIARY from unauthorised entry • Enter your Appointments and Engagements for any date up to 31.12.1992 • Refer to your Appointments and Engagements at any time • Edit your Appointments and Engagements at any time • Call up for your immediate attention ANY Appointment and Engagement at any time • Record important dates, text and any other information at any time, e.g. your tax details, your professional advisers, events and their dates which are important to you • Refer to your recorded information at any time • Edit and update your recorded information at any time • Call up for your immediate attention ANY page of your recorded information at any time • Leave a MESSAGE for another authorised DIARY user • Study the dates of a calendar month in any calendar year from 1983 to 2057 • Read ANY Data File which has been created by EASY SCRIPT, AND EASY FILE • Prepare ANY of your DESK DIARY Data Files to be read by EASY SCRIPT • Initialise your Disks, make copies of your Data Disks, Delete entire Data Files, Rename your Data Files

Send for your own Desk Diary NOW.

It's ingenious...



***AND ITS FROM THE SOFTWARE TEAM THAT DESIGNED AND DEVELOPED* EASY FILE**

Digital Lab £29.95 (Disk + Manual) for your Commodore 64

DESIGN your own LOGIC CIRCUITS using AND Gates, OR Gates, EXCLUSIVE OR Gates, INVERTER LINKS, Simple LINKS, ANGULAR LINKS, TAPPINGS and JUNCTIONS with this ingenious Software Program.

DIGITAL LAB is a powerful Program which performs various functions of a LOGIC LABORATORY. With DIGITAL LAB you can design and construct your own LOGIC CIRCUITS. You can select any LOGIC ELEMENT and LOGIC LINK from a comprehensive set of MENUs. DIGITAL LAB will check the validity of every LOGIC GATE and LOGIC LINK in your CIRCUIT. It will analyse your LOGIC CIRCUIT and the results of its analysis will be displayed in a TRUTH TABLE with the corresponding Boolean Expression.

DIGITAL LAB contains many other features and UTILITIES which are very useful to such an Application including a set of Disk House Keeping UTILITIES which allows you to FORMAT all your Disks, make copies of your Data Disks, DELETE entire Data Files and RENAME your Data Files.

DIGITAL LAB is a unique tool for pupils, students and anyone else who would like to extend their practical approach to Designing and Constructing LOGIC CIRCUITS. With the use of DIGITAL LAB understanding LOGIC CIRCUITS is made easy and you can enjoy the atmosphere of a LOGIC LABORATORY in the comfort of your own home.

DIGITAL LAB is easy to operate and will help to provide a clear understanding of Boolean Algebra with reference to LOGIC CIRCUITS. It is written in Commodore 64, 6502 Assembly language and is therefore very fast in its operations.

Send for your own DIGITAL LAB NOW.

These software programs will be supplied with the benefit of a 6 months guarantee but subject to the terms of such guarantee which are available on request.

To: Associated Services (London) Ltd., 23 Chesham Street, London, SW1X 8NQ.
Telephone: 01-245 9522

Please send me the following software PRODUCTS (Disk + Manual):

DIGITAL LAB _____ copy/copies at £30.95 each (£29.95 + £1.00 p+p) £_____

DESK DIARY _____ copy/copies at £30.95 each (£29.95 + £1.00 p+p) £_____

CC5 TOTAL £_____

I enclose a cheque/Postal Order for £_____

Please charge £_____ to my credit card (specify card) [Access/Mastercard/Visa]

Signature _____ Expiry date _____

Card No. | | | | | | | | | | | | | | | | |

Name _____

Address _____

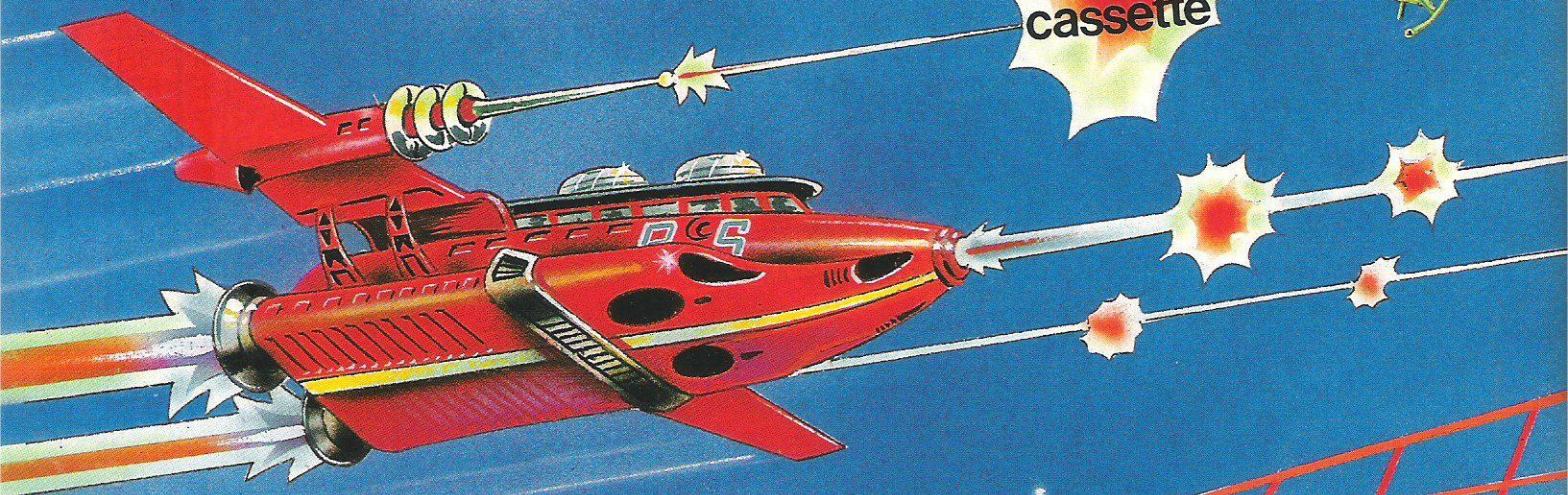
_____ Post Code _____

The most amazing game you will see on the C16

DEFENCE-16

Available from all good software outlets

£7.99 cassette



If you have a marketable programme send it to us NOW for fast evaluation.

Cheques made payable to:
PROBE SOFTWARE
inc. 50p postage & packaging

COMMODORE 16 / PLUS 4

PROBE SOFTWARE

PROBE SOFTWARE, 74 RIBBLESDALE ROAD, LONDON SW16 6SE. Tel: 01 - 769 2133

Bak

Extension based on C16

Believe it or not, the C16 is a better computer than the good, ole 64 – in some ways, that is. And one company has harnessed those superior traits for use on Commodore's finest.

Micro Component Trading Company has developed MCT Basic, an extension program that takes the virtues of the C16 and transfers them to the 64. Among those virtues is a help facility for error checking and the ability to access information without pokes using a simplified sprite facility.

The program leaves just under 30K free to Basic. Initially in cassette form with Turboload, MCT Basic uses the C16's more sophisticated Basic and incorporates sprite and hi-res graphics commands. It sells for £10.95 incl VAT.

MCT also is considering a ROM version in the future that will leave as much as 48K free to Basic.

Contact: Micro Components Trading Company, Group House, Fishers Lane, Norwich, Norfolk NR2 1ET. Tel: 0603 666966

Speech 64 price cut

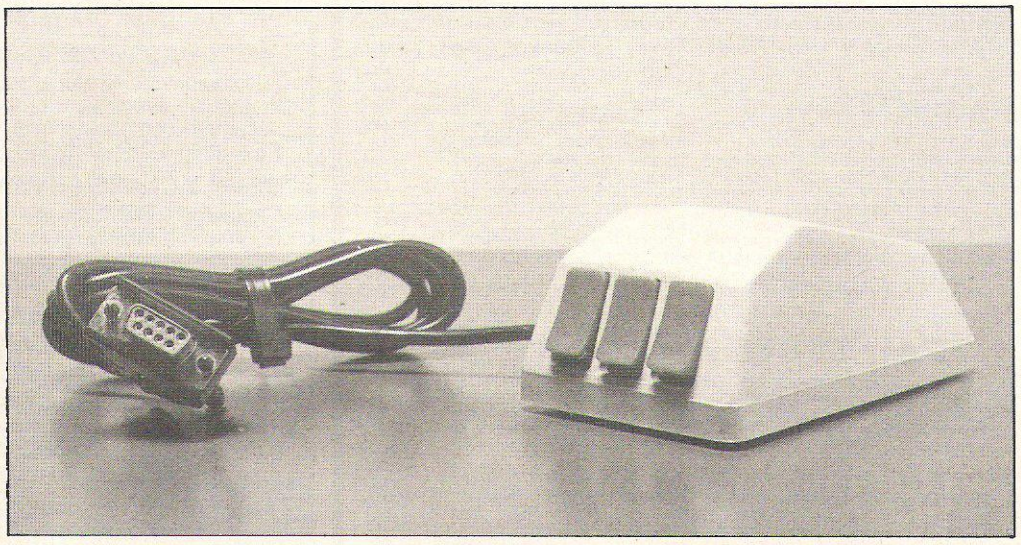
A company who recently took over handling of the Currah Speech 64 synthesiser has lowered its price nearly 30 percent.

Welwyn Systems, a division of Crystalate Holdings Group, is now offering Speech 64 at £21.95 compared to the old price of £29.95. Currah went into receivership late last year and Welwyn and dk'tronics now handle the allophone-based synthesiser.

Welwyn also announced the availability of a Y-cable adaptor for the 64. It enables users to run Speech 64 at the same time as a monitor, eliminating the necessity of unplugging the monitor. The adaptor retails for £3.99 including postage and packing.

Contact: Welwyn Systems Division, Bedlington, Northumberland NE2 7AA. Tel: 0670-822181

Eeeeeeks! a mouse!



After all these years, someone finally has come up with a mouse for the 64.

At a modest price of £59.95, the Mouse is claimed to give "previously unheard of speed, style and sophistication to the home computer user."

On the 64, SMC Supplies says the Mouse gives sixteen colours, various brush shapes, air brush, fine point, rubber band straight lines, triangles, circles, boxes, fill, variable text and panic button. It also has facilities to save and reload to and from tape or disk. A fully shaded screen dump works with most Centronics printers; and a sprite designer and character designer make shapes that can be integrated into the users own programs. Any paddle controlled 64 software also works with the Mouse.

Contact: SMC Supplies, 11 Western Parade, Great North Road, Barnet, Herts EN5 1AD. Tel: 01-441 1282

Potential for new software

A company formerly specialising in how-to books is entering the computer software market with titles beginning, on Commodore, with a typing program and an adventure game.

Dorling Kindersley is making its move under the new name Goldstar. Tiny Touch 'n Go originally was written for potential touch typists on business computers but now includes keyboard graphics. The company claims the program moves the learner to 40 words a minute in 24 hours (not 24 hours straight, we assume). It is comprised of 58 lessons, and after each attempt tells you your speed and number of mistakes.

Tiny Touch 'n Go is available for the 64 at a price of £9.95.

An adventure game called The Greedy Dwarf is available for the 64. It is a text adventure with sophisticated parser that has the player searching tunnels of the King's Castle. You're looking for Arfa, the outcast dwarf who has stolen the royal gems and is protecting them with various "unpleasant devices and strange monsters." The Greedy Dwarf is £9.95 on cassette only.

In its Screen Shot programming series, Dorling Kindersley just published its third and fourth books for the 64, both about graphics. Book Three considers a complete Basic plus machine-code system for generating high-res graphics more quickly. Book Four focuses on advanced sprite programming.

All books in the series are full colour and use monitor shots of the program listings and programs running. Aside from the advantage of what-you-see-is-what-you-get on your own screen, taking the listings straight from the screens eliminates the danger of typos in the published listing.

The first and second books cover setting up the computer, how it works and how to use its Basic. Each sells for £5.95. Books Three and Four will be included in Graphics Packs to be released in the autumn with a cassette including each of the software routines in the books and demonstrations of how they work. The Graphics Packs will sell for £15.95.

Contact: Dorling Kindersley, 1-2 Henrietta Street, Covent Garden, London WC2E 8PS. Tel: 01-240 5765.

US firm gambling

An American company has resorted to gambling in software – of a sort.

Software Exchange has developed a software package for thoroughbred and harness racing handicapping. In two parts, the package sells for $29.95, the equivalent of £25.60 at press time. Menu driven, the programs include separate analyses of thoroughbred racing and harness racing, each taking into account the specifics applicable to that field.

The user types in information available from racing forms and the computer calculates the winning horses from a rating system. The programs have been in use in America for about four years, but variations may occur depending on different racing rules in the UK and the US. The company can be contacted for further information. The whole package includes both handicapping systems.

Contact: Software Exchange, 2681 Peterboro Rd, PO Box 5382, West Bloomfield, MI 48033, USA

VIZASTAR 64

A SPREADSHEET, A DATABASE AND GRAPHICS TOO, ALL INTEGRATED INTO ONE AMAZING PACKAGE... AT AN AMAZINGLY AFFORDABLE PRICE! THE LATEST DESIGN TECHNIQUES COMBINE ULTIMATE EASE-OF-USE, WITH ALL THE SOPHISTICATION OF AN INTEGRATED PRODUCT... ADVANCED SPREADSHEET FEATURES INCLUDE HIGH-SPEED MATHS FUNCTIONS, 1000 BY 64 WORKSHEET, PROGRAMMABILITY, WINDOWS, CELL PROTECTION, SEARCH AND SORT, TEXT EDITING, WORDPROCESSOR COMPATIBILITY, SIMULTANEOUS GRAPHICS... INTEGRATED WITH A 1000-CHARACTER PER RECORD DATABASE, UP TO 250 CHARACTERS PER ITEM... THE ONLY PRODUCT OF ITS KIND FOR THE COMMODORE 64! SUITS MOST PRINTERS, SUPPLIED WITH EXCELLENT HANDBOOK.

OUR PRICE ~~£99.95~~ £89.00

Jetpack YOUR PROGRAMS WILL REALLY TAKE OFF WITH DTL JETPACK 64! 100% COMPATIBLE WITH CBM BASIC, JETPACK COMPILES BASIC PROGRAMS INTO MACHINE CODE, RUNNING UP TO 25 TIMES FASTER... AND USING UP TO HALF AS MUCH MEMORY, TO GIVE FASTER LOADING, OR BIGGER PROGRAMS! AND IT EVEN ACCEPTS BASIC EXTENSIONS AND MACHINE CODE ROUTINES AS WELL!

OUR PRICE (DISK) ~~£39.95~~ £35.95

Master 64 HAS EVERYTHING YOU NEED FOR PROGRAMMING TO TOP PROFESSIONAL STANDARDS! BASIC IV, MACHINE CODE MONITOR, AND 85 POWERFUL NEW COMMANDS... INCLUDING TOOLKIT, BUSINESS BASIC, KEYED ACCESS FILES, DISK DATA COMPRESSION, FORMATTABLE SCREEN ZONES, MULTIPLE SCREENS, DATE CONTROL, REPORT GENERATOR, 22-PLACE ARITHMETIC, SCREEN PLOT, SCREEN DUMP, AND MORE...

ALL FOR ONLY £64.95!

VIZAWRITE 64

VIZAWRITE 64 IS A HIGH-PERFORMANCE, LOW-COST WORD PROCESSOR WITH ON-SCREEN FORMATTING, THAT TAKES FULL ADVANTAGE OF THE 64'S COLOUR, GRAPHICS AND MEMORY FEATURES... AND SUPPORTS VIRTUALLY ANY PRINTER! WITH A COMPREHENSIVE AND EASY-TO-FOLLOW USER REFERENCE MANUAL, VIZAWRITE IS THE ULTIMATE PERSONAL COMPUTER WORD PROCESSOR! AVAILABLE ON CARTRIDGE (~~£89.95~~ £78), DISK (~~£79.95~~ £68) OR WITH VIZASPELL (~~£99.95~~ £85)

*** WANT IT TOMORROW? *** CALL US TODAY! *** ON 01-546-7256

VIZASTAR	(DISK)	~~£99.95~~	£89.00	MULTIPLAN (US)	(DISK)	~~£79.95~~ £67.95
VIZASPELL	(DISK)	~~£59.95~~	£49.95	PRACTICALC	(DISK)	~~£44.50~~ £39.95
EASYSCRIPT	(DISK)	~~£75.00~~	£65.00	PRACTICALC	(TAPE)	~~£39.95~~ £34.95
EASYSPELL	(DISK)	~~£50.00~~	£41.95	HOMEBASE 1-4	(SUPERBASE)	£17.95
SIMON'S BASIC	(CART)	~~£50.00~~	£41.95	STEPPING STONES	(SUPERBASE)	£9.95
FIGARO 64	(DISK)	~~£86.25~~	£75.00	PRINTLINK 64	(INTERFACE)	£29.95

PRICES INCLUDE 15% VAT AND ARE CORRECT ON GOING TO PRESS. ORDER BY POST OR PHONE, USING CHEQUE, ACCESS/BARCLAY CARD OR OFFICIAL ORDER. DESPATCH IS BY SAME-DAY 1ST CLASS POST. PRE-PAID ORDERS FREE. PRODUCT DATA AVAILABLE ON REQUEST. REF A31

VISA

Calco Software

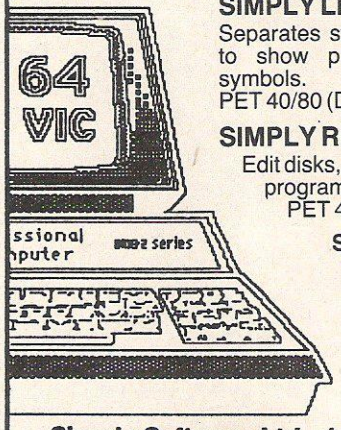
LAKESIDE HOUSE, KINGSTON HILL, SURREY, KT2 7QT. TEL 01-546-7256

SIMPLE WRITE – word processor
Full features, budget price. So easy that it's even in primary schools, as well as in universities from London to Hong Kong.
PET 40/80 DISK **£45,** TAPE **£40.** C64 **£40/35.** VIC(16K) **£35/25.**

SIMPLY FILE – DBS (file management system)
Practical, robust, easy to use and very, very versatile. Does everything you need, yet even allows you to extend or change it.
PET 40/80 (DISK ONLY) **£65.** C64 **£60.** ALSO FOR VIC (ASK).

SIMPLY ASSEMBLE – 'assembler processor'
Full feature symbolic assembler/editor/disassembler package that works like a word processor. Store and link source code, assemble for other machines.
PET 40/80 & C64, DISK OR TAPE **£22.**

SIMPLY CLASS ADMIN – class organiser
Specialised DBMS to plan classes and keep track of them. Prints clash tables, up to 7 year-groups, written by teacher for own use.
PET 40/80 (DISK ONLY) **£50.**



SIMPLY LIST – structured list (disk)
Separates statements on same line, indents to show program logic, converts cursor symbols.
PET 40/80 (DISK ONLY) **£10.**

SIMPLY RECOVER – 'disk repair kit'
Edit disks, recover from read errors, merge programs.
PET 40/80 ONLY **£17.**

Send for details of these and other useful programs for PET/64.

ALL PRICES SHOWN EXCLUDE VAT BUT INCLUDE POST & PACKING IN UK.

Simple Software Ltd. 15 Havelock Rd. Brighton Sussex BN1 6GL
Tel: (0273) 504879

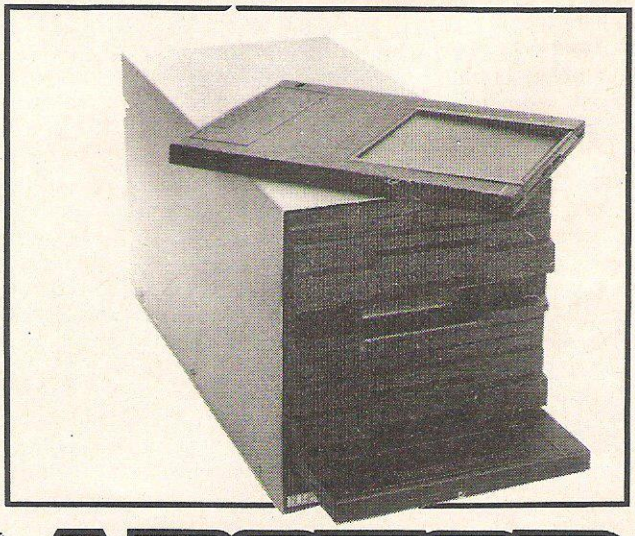
Access

Safety Fast

The fast way to get your precious data safely tucked away is with Alpha 10. With Alpha 10's compact cartridges, data copying is as simple as with floppies and as fast as any Winchester. They are PORTABLE — and that means SAFETY!

The APSTOR Alpha 10 + 10 MB Disk Unit is a high performance, high capacity removable cartridge disk system designed specifically for use with Commodore microcomputers. It provides the user with two removable 10 Megabyte cartridge drives (i.e. 20 Megabytes of on-line disk storage) and total compatibility with the current range of Commodore's own disk units.

- Compatible with the Commodore IEEE-488 interface
- Equivalent to the Commodore 9090 hard disk and 8250 twin floppy disk
- Supports all the facilities of the Commodore DOSs
- Copy rate is 1 Mbyte per minute
- Supports the relative file handling of the Commodore 9060/9090 hard disk units
- Similar disk layout to the 9060/9090 units
- Supports the changing of the Commodore IEEE device number



OFFICIALLY APPROVED BY COMMODORE

APSTOR LTD

Greater London area distributor:
COMPUTOPROCESSING LTD. 195-197 Wardour Street, London W1V 3FA. Tel: 01-734 2846/2961

Unit 5, Victoria Road Trading Estate, Portslade, Brighton Sussex: Tel: (0273) 422512 Telex: 87351
Please quote 'CCI' in all enquiries

Taking stock

A Stock Accounts System recently introduced by CYB Computers speeds up the searching function with a new "rapid search decision tree."

CYB says the facility searches stock cards or purchases in a fraction of a second and gives fast access to the main records — approximately three seconds. The package includes nine machine code, menu-driven programs for 300 stock/purchases items serving 50 suppliers, 50 customers, 100 sales and 100 deliveries per data disk. The program also updates stock levels with sales and deliveries automatically.

The display permits complete and outstanding purchases with all purchases included. That allows the user to print a hard copy to the end of the month being maintained.

A checking function discourages repetition of stock cards or faulty information from actually being filed by letting the user confirm the input. Invoice generation includes allowance for discounts of up to 50 percent, VAT calculation, VAT registration number and other necessary features. Up to six stock entries can be made per sale.

Two additional packages which will integrate with the Stock Accounts System will be introduced in the autumn. They are Sales and Purchase Ledger and Balance Sheet/Profit And Loss. Each of the three packages sell for £74.95 and come in 5.25 inch disk format.

Contact: CYB Computers, 9 Crown Parade, Crown Lane, Morden, Surrey SM4 5DA. Tel: 01-542 7662

PC software for graphics

A software house specialising in database management systems has launched a new graphics extension for its Delta program.

Compsoft PLC of Surrey has set a retail price of £195 for Delta Graph, which links with Delta and other common database packages to produce graphics from information contained in a file. Capabilities include bar, pie, line and scatter plots in up to six colours.

Delta Graph, which works on IBM-PC compatibles including the Commodore PC, has a report generator enabling the user to generate a matrix report similar to a spreadsheet with each intersection of row and column called a cell. Suggested uses Compsoft gives include graphing costs of vehicles by age and type or company costs per cost centre, department and year.

Compsoft also produces Domino, an interactive training and assessment software package for PC compatibles. It includes full graphics capabilities than can be woven into text in various places depending on the user's responses.

Contact: Compsoft PLC, Compsoft Manor, Farncombe Hill, Godalming, Surrey GU7 2AR. Tel: 04868-25925.

Office extras

Screen filters for cover and trolleys for support — new offerings from two computer accessory firms.

MBS Data Efficiency Ltd is handling VDU filtering screens manufacturered by 3M, many of them selling for less than £30. Made of neutral density grey material and covered with a high resolution matt finish, the filters improve contrast and eliminate glare. They are attached directly to the screen rather than hung on the edge.

Available for 9", 12" and 15" screens, they are suitable for most monitors used with Commodore computers.

Bulldog Computer Services of Leicester has a portable trolley specifically designed for Commodore Pets. It has a sturdy, contemporary design and height can be adjusted to preference. Two of the casters can be locked to keep the trolley in place and a fixing clamp at the back keeps cables together.

The trolley, which retails for £85 plus VAT, comes with a five year guarantee and a 30 day approval option.

Contacts: MBS Data Efficiency Ltd, Maxted Road, Hemel Hempstead, Herts HP2 7LE. Tel: 0442 60155.

Bulldog Computer Services, 33 Hinckley Road, Sapcote, Leicester LE9 6FS. Tel: 045527 2329.

Direct info on flights

Professional jetsetters might be glad to hear of a database that brings to your office information about thousands of airline flights schedules along with costs.

The Electronic Edition already is available in the United States and for about one year in the UK through such services as Dow Jones News/Retrieval. Direct access should be available later this year.

A subscriber pays a one-time fee of US$50. The service is available through telephone-linked computers in most European countries via a local call and offers more than 820,000 worldwide schedules from 700 airlines. The format, claimed to be "totally unbiased," enables the user to select flights on the basis of convenience or cost.

The database actually is designed for travel agencies' use as well as private users. Information on normal and discount fares is updated daily and direct flights, connecting service schedules and rules are updated weekly.

Contact: Official Airline Guides, Mike Mullany, 130 Jermyn Street, London SW1Y 4UJ. Tel: 01-930 2915. In the US, Official Airline Guides, 2000 Clearwater Drive, Oak Brook, IL 60521.

C8000 punch tape editor

Surprise, surprise! Finally, we hear of some new software for 8000 series owners, that long-neglected breed that filters through pages of 64 news in despair. The utility is for the technically-minded, though, specifically for engineering machine shops.

Amazon Micro Systems of Milton Keynes is offering a new NC-tape preparation system called NC-Editor. Designed to use machine language, the program is entered onto a spreadsheet mask formed by the programmer. The result is fast and inexpensive production of NC punch tape on a machine that can also do other tasks. While the system works on any of Commodore's 8000 series, Amazon will also supply the software and appropriate interface card with an 8296D computer. The software and card are £825 and the computer sells for £1,695.

Using the numeric and control keys, the program can be built up onto the mast with sections manipulated, erased, copied and altered in single blocks or by words and characters. The completed program and relevant mask can then be stored to disk. Relevant management information is stored in "file card" mode and details punched onto the tape leader are what Amazon calls 'man-readable."

The program requires no post processor software and can be linked to various peripherals.

Contact: Amazon Micro System, Sunrise Parkway, Linford Wood, Milton Keynes MK14 6LQ. Tel: 0908 664123.

Two-faced PC printer

Now that Commodore patrons have a PC among computer choices, they will have to think, too, about a crucial element that is not included in the package — a printer.

Olivetti, who also makes its own PC, has introduced a portable electronic typewriter that doubles as a dot matrix computer printer or keyboard. One big plus is the price, a relatively low £375.

The ET Compact 60 offers a range of typing and editing facilities for office or home use, including a liquid crystal display, automatic correction of the working line with an 80 character memory buffer and a keyboard selector. The latter allows for special foreign language characters, among other functions.

Contact: British Olivetti Ltd, PO Box 89, 86/88 Upper Richmond Road, London SW15 2UR. Tel: 01-785 6666.

Lost for words?

If you've tackled all the word puzzles you can find and are ready to try some of your own, David Hornsby may have something for you. This program written for the PET/CBM computer generates a wordsearch puzzle on the screen and then prints it out as many times as you wish on paper.

The word square is fifteen letters by fifteen and words are limited to lengths from 4 to 14. It is unwise to try and squeeze more than about 20 long words in to a square of this size, since the program does not re-adjust the wordsquare if it runs out of space.

At the beginning you must enter a number between about 10 and 1000: try 50 to start with. This is the number of attempts the program will make to link a letter in one word with a letter in an existing word. A large number produces a better interlinking but the program takes longer to run.

Next, the list of words is entered. Terminate the entry with three stars. The words are sorted by the program into order by length and the longest words are placed in the word square first. Each attempt is show on the screen by a flashing cursor and each successful link attempt rings the bell (if fitted to your PET).

The method used to place a word is simply to try at random until some fit is found. The results are surprisingly good as may be judged by the examples given.

It is well worth compiling this program if you have a compiler. If not you will need to go away and make a cup of coffee while it runs since it will take a few minutes — a few hours if you enter a large number for the linking attempts.

Line 2060 will need changing for 80 column CBM computers. The modifications are in the REM statement of line 2062. The program should also work on other Commodore machines although the screen display will not work without adjustment to this same line.

(In this line, if the "32846" is taken as number 1 and the "40" as number 2, the formulae are:
number 1 = VDU + (2 × C) − 2
number 2 = C
where C is the column width of your screen and VDU is the address of the top left hand corner of the screen.)

```
1000 REM D.D.HORNSBY
1010 REM 28/3/85
1020 REM **********
1030 PRINT"■■■■■              PROGRAM TO PRODUCE
1040 PRINT"■■■■                ____________
1050 PRINT"                   ■WORD-SEARCH
1060 PRINT"■■■■■■■■■■          D.D.HORNSBY    MARCH 1984
1070 GOSUB1880
1080 DIM WS$(99)
1090 DIM AR$(15,15)
1100 PRINT"■HOW WELL MATCHED DO YOU WISH THE
1110 PRINT"■WORDSEARCH INTERLINKING TO BE?"
1120 PRINT"■■■■(ENTER A NUMBER BETWEEN ABOUT 10
1130 PRINT"AND 1000. A HIGHER NUMBER GIVES A
1140 PRINT"BETTER INTERLINKING BUT TAKES LONGER)
1150 INPUT"■■■■■■■";VA$:IFVA$=""THENPRINT"■■":GOTO1150
1160 VA=VAL(VA$):IFVA<1THENPRINTCHR$(7)"■TOO LOW.
     TRY AGAIN":GOTO1120
1170 IFVA>9999THENPRINTCHR$(7)"■TOO HIGH.
     TRY AGAIN":GOTO1120
1180 REM READ IN ALL THE WORDS
1190 FORQQ=1TO100
1200 GOSUB2400
1210 IFWS$="***"THEN QQ=100
1220 NEXT QQ
1230 GOSUB1710: REM SORT WORDS INTO LENGTH ORDER
1240 GOSUB1800: REM PRINT SORTED LIST
1250 REM INITIALISE ARRAY WITH STARS
1260 REM ****************************
1270 FORI=1TO15
1280 FORJ=1TO15
1290 AR$(I,J)="*"
1300 NEXTJ,I
1310 PRINT"■
1320 GOSUB2090 :REM PRINT ARRAY
1330 FOR QQ=1 TO 100
1340 WS$=WS$(QQ) :REM GET WORD
1350 IF WS$="***"THEN QQ=100:GOTO1510
1360 GG$="BAD":TR=0
1370 GOSUB1960 :REM CHOOSE DIRECTION
1380 GOSUB2020 :REM CHOOSE START SQUARE
1390 GOSUB2200 :REM CHECK IF IT FITS
1400 POKESQ,PEEK(SQ)AND127
1410 IFAN$="NO"GOTO1370
1420 GOSUB2270 :REM CHECK IF OCCUPIED SPACES
1430 IF AN$="NO" THEN GOTO 1450
1440 GOTO 1370
1450 TR=TR+1: IF TR>VA THEN 1490
1460 IF QQ=1 THEN 1490
```

```
1470 PRINT"■■■
```

```
2160 NEXTJ
2170 PRINT
2180 NEXTI
2190 RETURN
2200 REM CHECK IF WORD FITS
2210 REM **********************
2220 AN$="YES"
2230 L=LEN(WS$)
2240 IFI+L*X>16 OR I+L*X<1 THEN AN$="NO"
2250 IFJ+L*Y>16 OR J+L*Y<1 THEN AN$="NO"
2260 RETURN
2270 REM CHECK IF ARRAY OCCUPIED
2280 REM ************************
2290 AN$="NO"
2300 FOR A=0 TO L-1
2310 IF AR$(I+A*X,J+A*Y)<>"*"THEN GOSUB2700
2320 NEXT A
2330 RETURN
2340 REM WRITE NEW WORD
2350 REM ***************
2360 FOR A=0 TO L-1
2370 AR$(I+A*X,J+A*Y)=MID$(WS$,A+1,1)
2380 NEXT A
2390 RETURN
2400 REM GET WORD
2410 REM *********
2420 WN=WN+1 :REM COUNT WORD NUMBERS
2430 PRINT"■■ENTER WORD ( *** TO END)"
2440 PRINT"          ———"
2450 INPUT"■■■■■■■■";WS$
2460 IFWS$=""THEN PRINT"□□":GOTO 2450
2470 IFWS$="***"THEN2500
2480 IFLEN(WS$)<4THENPRINT"■WORD TOO SHORT"
     :GOTO2430
2490 IFLEN(WS$)>14THENPRINT"■WORD TOO LONG"
     :GOTO2430
2500 WS$(WN)=WS$
2510 RETURN
2520 REM ENTER RANDOM LETTERS
2530 REM ********************
2540 FORI=1TO15
2550 FORJ=1TO15
2560 IFAR$(I,J)="*"THENAR$(I,J)=CHR$(RND(1)*26+65)
2570 NEXTJ,I
2580 RETURN
2590 REM PRINT OUTPUTS
2600 REM **************
2610 OPEN4,4:CMD4
2620 GOSUB2130
2630 PRINT#4
2640 PRINT#4
2650 PRINT#4
2660 PRINT#4
2670 PRINT#4
2680 PRINT#4:CLOSE4
2690 RETURN
2700 REM CHECK IF FOUND LETTER MATCHES NEW LETTER
2710 REM ********************************************
2720 IF AR$(I+A*X,J+A*Y)= MID$(WS$,A+1,1)THENPRINTCHR$(7);:GG$="GOOD":RETURN
2730 AN$="YES":GG$="BAD":RETURN
2740 REM END OF PROGRAM
2750 REM ***************
2760 PRINT"■DO YOU WANT A NEW WORDSEARCH
2770 PRINT"■■USING THE SAME WORDS?"
2780 PRINT"■■■ENTER Y OR N";
2790 GETRE$:IFRE$=""THEN2790
2800 IF RE$="Y"THEN1250
2810 IF RE$="N"THEN2830
2820 GOTO2760
2830 PRINT"■■■■■PROGRAM END"
```

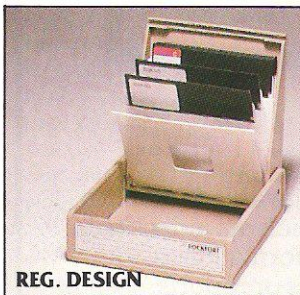
```
K V D Q Z L K C V T P R M E S
C H J S N E U K A Z Z A B I T
P O N M P E S O Y R G I L Q K
C K P Q L H H M W N B V N F W
G X G P M E O F E C E O A C G
V A N A E U U S H R H G N D R
W E K I L R I L P Y C H Y H R
G X T K T U O S D H H U W X H
W R M D M R M R S A O P R D O
B C Y U I U O I U A E R Y Y Y
G N X N I G I G N H T L U H K
V O E C E D E N E I P O K S R
M Z L N C O O T A N U L P I X
W A H D T R Y S O R M M U Z G
C U P I I T T D H P U W P S B


PHOSPHORUS
MAGNESIUM
ALUMINIUM
POTASSIUM
NITROGEN
HYDROGEN
CHLORINE
MERCURY
CALCIUM
SULPHUR
URANIUM
COPPER
SILVER
SODIUM
OXYGEN
CARBON
IRON
LEAD
GOLD
ZINC
***
```

Example 2

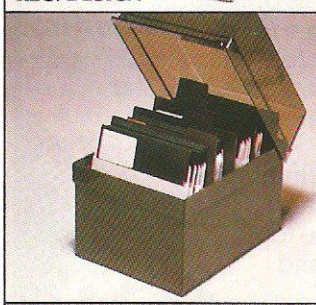
CCI

Rockfort Disk Storage System

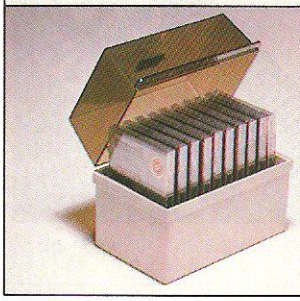


REG. DESIGN

M.F. 10 Floppy Disk Box
Holds 10 – 5¼" Disks
£2.45
Incl. VAT, Post & Packing



M.F. 50 Floppy Disk Box
Holds 50 – 5¼" Disks
£9.50
Incl. VAT, Post & Packing



M.D. 12/30 Micro Disk Box
Holds 12 to 30 – 3½" Disks according to thickness
£7.85
Incl. VAT, Post & Packing

Rockfort Diskfile Range of products not only offer an easy reference and attractive disk filing system but also offer complete protection from damaging dust particles. Post for your order today!

ROCKFORT DISK STORAGE

Manufactured by Projectron Ltd — Trade inquiries invited

CC1

ROCKFORT PRODUCTS – Member of the Vignesh Group, 30 Topsfield Parade, London, N.8. Tel: 01-348 0543

CODE NO.	DESCRIPTION	QTY.	PRICE £	P
M.F. 10	5¼" DISK BOX			
M.F. 50	5¼" DISK BOX			
M.D. 12/30	MICRO DISK BOX			
		TOTAL		

PLEASE FORWARD THE ROCKFORT DISK BOX/S AS INDICATED ABOVE. I ENCLOSE CHEQUE VALUE £ _____

NAME _____

ADDRESS _____

POSTCODE _____

VIZASTAR 64

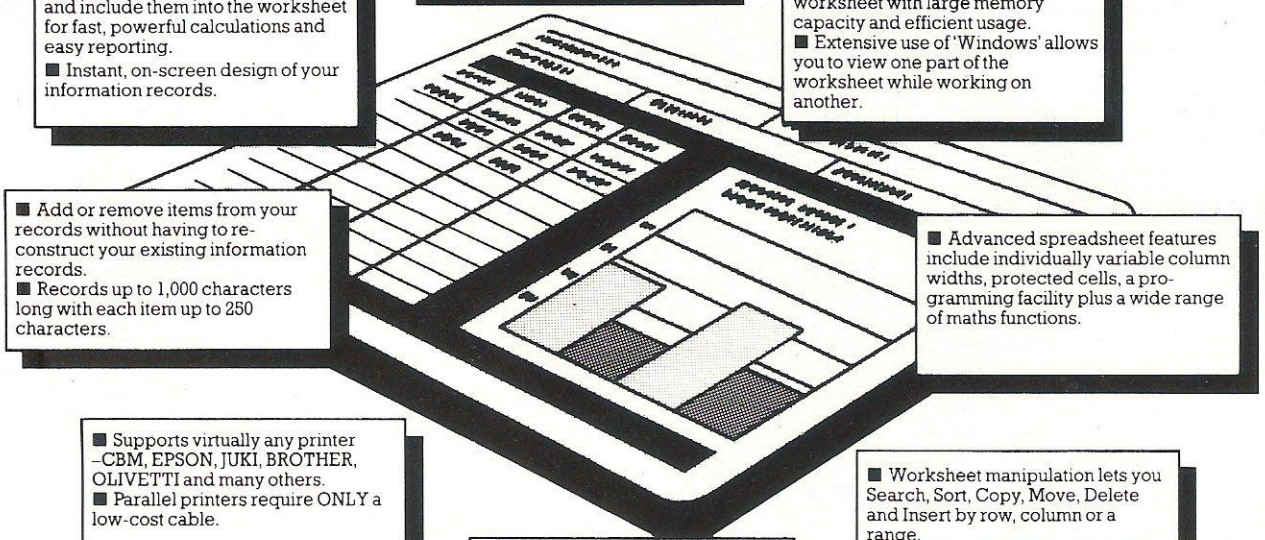
THE INFORMATION PROCESSOR

■ Spreadsheet ■ Database ■ Graphics

■ One word menu lines for easy selection of facilities.
■ The high resolution grid pattern frames the worksheet giving an easy-to read display.

■ Extract from your information files and include them into the worksheet for fast, powerful calculations and easy reporting.
■ Instant, on-screen design of your information records.

■ A 1000 Row by 64 Column wide worksheet with large memory capacity and efficient usage.
■ Extensive use of 'Windows' allows you to view one part of the worksheet while working on another.



■ Add or remove items from your records without having to re-construct your existing information records.
■ Records up to 1,000 characters long with each item up to 250 characters.

■ Advanced spreadsheet features include individually variable column widths, protected cells, a programming facility plus a wide range of maths functions.

■ Supports virtually any printer –CBM, EPSON, JUKI, BROTHER, OLIVETTI and many others.
■ Parallel printers require ONLY a low-cost cable.

■ Worksheet manipulation lets you Search, Sort, Copy, Move, Delete and Insert by row, column or a range.
■ Text editing facilities for letters, invoices, report headings etc.

■ Include information directly into the Worksheet from VizaWrite and almost any other system.
■ Simultaneous display of worksheet and line or bar graphs.

VizaStar integrates three important electronic aids to your business or home office.
A fast and easy-to-use package – VizaStar is a comprehensive information processor that includes an electronic worksheet, information filing system and simultaneous on-screen graphics.

VizaStar has been designed to incorporate the very latest in user-friendliness – so now you can handle your all-important information in many new ways and in a quick and effective manner.

The information filing capabilities of VizaStar enable you to store your information onto disk in an ordered and instantly retrievable form. This means that you can quickly pick out individual or entire groups of related information to create lists, statements, labels or reports.

VizaStar is the ONLY program of its kind on the Commodore 64. Completely consistent with the VizaWrite word processor, VizaStar provides a totally comprehensive office system.

VizaStar costs just £99.95 (incl. VAT) from your computer dealer and selected stores. Please write for more details and the name and address of your nearest dealer.

VIZA SOFTWARE

VIZA SOFTWARE, 9 MANSION ROW, BROMPTON, GILLINGHAM, KENT ME7 5SE
TEL: MEDWAY (0634) 813780
Dealer enquiries welcome.

AVAILABLE NOW- VIZASTAR 64
£99.95 (inc VAT)

A firm base

Tony Lydeard probes three recent business packages starting with a database from Orpheus

A database is a way of storing information in such a way that it is readily available for reference or alteration. Using a database is often the first serious use that a computer is put to, as it can be used on a lot of different applications — catalogueing computer programs, for instance, or filing names and addreses.

Megabase is rather different from the majority of database programs available for the Commodore 64. There is only one menu, displayed on loading, which offers just three options — load database from cassette, load database from disk or create new database. All other communication is by means of Megabase's own series of commands. This means that, in order to use the program at all, it is necessary to learn the "language." Although this would, of course, present no difficulty to an individual user, it could be a serious drawback if the program were to be considered for general use in an office, for instance.

Once the language has been mastered — and it's not really all that difficult — Megabase provides a useful and flexible way of storing and manipulating all sorts of data.

"Rather different"

The system is based entirely in memory, giving it a speed advantage over disk-based systems but limiting the amount of data that can be retained in one base to about 20K. This should be quite adequate for most personal or domestic purposes. Since sorting can be carried out on any field and records can be deleted on virtually any criterion, a database that threatens to overflow the C64's memory can be split into two or more parts quite easily.

Records can consist of up to 26 fields, each of which must be designated numeric or alphanumeric before data can be entered. If in any doubt about the number of fields that are going to be needed for a particular purpose, it is advisable to open a few extras since the fields cannot be changed without re-entering all your data. Megabase can display or print as many or as few fields as are required so this process need not clutter up your screen or page with blank entries.

The command SELECT is used to decide which fields will be displayed and FIND to locate a particular record, using any fieldname and the approriate search criteria. Records or parts of records can be DUMPed to either screen or printer in tabular form, using the fieldnames as headings.

Megabase's system of interactive sentences means that data can be located, modified, printed and refiled in one operation. Additional text can be inserted to produce meaningful reports and the progam caters for operator intervention in the form of INPUTs. These can be transferred to fields or can operate on the data already present. Nineteen "registers" are also available for temporary storage — used to transfer data from record to record or to shuffle data between fields of the same record.

"Almost a structured programming language in itself"

The four principal arithmetic functions are supported, as are the logical operators AND and OR. With these, quite complex manipulation can be carried out. Conditional expressions can also be used.

Complicated command sentences can be SAVEd within the program for later recall. In this sense, Megabase is almost a structured programming language in itself — although one "Macro" cannot call up another.

It would be true to say that Megabase is an extremely versatile data handling system. There are, however, a number of irritating shortcomings. There is, for instance, no built-in parallel printer interface. The Company's advertising literature claims that Megabase can be used with a Stack interface but the manual does not give details (use a top address of 39420 if you have this problem).

"Extremely versatile"

The accuracy of numerical entries can be fixed between 0 and 9 decimal places. Unfortunately, it cannot be set to different values for different fields. This means that if, for example, you want to record numbers of invoices and their average value you would have an agonising decision to make: should you record the numbers with two noughts (e.g. 4.00 invoices to a customer) or should you settle for the value to be rounded to the nearest pound?

I think that Megabase could be a first-class database for individual use but I was left with a feeling that it hadn't been finished. Orpheus offer a free update service — if they make a few changes to Megabase it could prove a very good investment. At £24.95 the program should be a little more polished to represent value for money.

Contact: Orpheus Ltd., Unit 1, Church Farm, Hatley St George, Nr Sandy, Beds. Tel: (0767) 51481.

Be Swift

The ability to perform numerous calculations quickly and accurately is probably the single most valuable asset of a computer and a spreadsheet is the most practical way of putting this ability to work.

A spreadsheet is usually likened to an enormous sheet of paper divided into rows and columns. Data entered into the various cells can be operated on to – for example – total all sales from a list of individual invoices, extract the tax element, deduct overheads and expenses and add suppliers' rebates in order to produce a "bottom line" profit figure. It is possible to change one or more of the equation to see the effect on the overall picture – the "what if?" principle.

All spreadsheets perform these functions so how does one choose between the many products available? Apart from the obvious variations in price, the main differences concern the way in which the spreadsheet is set up by the user. The GIGO (Garbage In Garbage Out) principle applies as much to spreadsheets as it does to any other computerised activity. Ease of operation is, therefore, an important criterion.

"The system is virtually idiot-proof"

Microswift works on a series of "pop-up menus", which makes it relatively simple for anyone – even a complete novice – to operate. The spreadsheet (or, to be more accurate, a portion of it) remains

on screen at all times. Pressing F5 causes the main menu to be superimposed over part of the screen. Making a selection from the main menu puts an overlapping subsidiary menu on top and so on. This system is virtually idiot-proof but can become a little tedious once you know what you're doing.

The sheet itself consists of 254 rows and 26 columns – not the largest on the market but by no means the smallest. Column widths can be adjusted either individually or globally to suit the length of the entries that need to be accommodated. Any cell can contain text, numbers or expressions. The expressions normally consist of references to other cells and operations to be carried out on them. The "edit line" at the top of the screen shows the contents of the active cell (i.e. where the cursor is positioned) – in the case of an expression, the edit line shows the expression while the sheet normally displays the result of the expression. Swift allows the user the option of displaying expressions on the sheet which can be very handy. To reduce the complexity of expressions, Swift has 21 functions in addition to the normal arithmetic operators.

"Ranges" – or blocks of cells – can be copied, saved, loaded, printed, erased, formatted or sorted. Ranges can even be named to facilitate reference.

"Manual or automatic recalculation"

Recalculation can be either manual (the program waits for F2 to be pressed) or automatic and can be chosen to proceed by row or by column. Swift also has a programmable mode which allows the user to enter a list of commands in column Z which are processed in turn, much like a Basic program. Particularly useful in this mode are the functions @TEXT and @NUMBER. These prompt for an input from the user, which can then be incorporated into the spreadsheet.

Swift allows several options in the way it displays numbers. They can be exercised over the whole sheet, over a stated range or for a single cell. Accuracy, for example, can be set from 0 to 8 decimal places (with rounding up/down taking place if entries are more precise): commas and currency signs can be inserted automatically (the program gives a choice between £ or $ but not #, which a lot of printers interpret as £) and there are three ways to have negative values displayed.

Conclusion

By and large, Swift is a useful piece of software. It has an adequate manual and the disk contains four sample sheets which illustrate some of the program's uses. It has an integral Centronics interface which seems to work very well but will only allow control codes to be sent at the beginning of a printout (it would have been nice to underline or enhance parts of the text, for instance).

Other minor irritations include the inability to sort ranges which include expressions and the lack of a full windowing facility.

Swift isn't quite as wonderful as Audiogenic's advertising campaign would have us believe but at £19.95 it does represent unusually good value for money – try it before paying out £50-£100 for something else which may be only marginally better.

Contact: Audiogenic Limited, PO Box 88, Reading, Berks. Tel: (0734) 664646.

Budget-priced database

Datapro is a low-price Database which claims to be able to replace and enhance any card index system. A Datapro file can contain a maximum of 200 records, each containing approximately 90 characters in up to eight fields.

The manual which accompanies the program is clear and concise, covering just four and a half pages. The user is led through the steps necessary to create and use a file without unnecessary jargon and with very little of the self congratulatory trumpet blowing that often finds its way into these publications.

When the program has been loaded, the user is presented with a menu covering the options available. Creating a file entails titling the fields required which are presented in turn. If fewer that eight fields are needed, leaving a title blank omits that field later on. Once the fields have been titled, the program returns to the main menu from which the "Add a record" option should be selected. The titled fields are then presented in turn and data up to a maximum of 25 characters per field can be entered. As each record is completed, the user is offered the choice of entering another record or returning to the main menu.

Having typed in all the records, return to the main menu and select "Sort file". This arranges all the records into a sequence dependent on field 1, the "key" field. All editing and direct searching is carried out on this field, so it should be the most significant item (eg in an address file it would be the name, in a secondhand car register it might be either the manufacturer or the model).

"Putting it through its paces"

The database can now be put through its paces. Selecting "Search file" from the main menu presents the Search Options menu with a choice of five different search modes.

All the records in the file can be displayed consecutively, using the space bar to move on to the next item. This is like looking through all the cards in a normal file one at a time – it's useful to remind yourself what's in there but it's not the way you'd look something up.

A particular record can be selected by entering the key field (the first two or three letters/numbers should be sufficient – if there's more than one match, you'll be offered all of them in turn).

All records between certain limits can be selected. Any one of the eight fields can be searched in this way, which provides a useful method of, for instance, checking on all cars in a given price range or with a certain engine capacity.

"Global search" enables you to specify a particular sequence of characters. Datapro will then search the whole file and present any record which contains that sequence. If you want to phone Jan but can't remember her number or surname, this is the way to do it. (You'll also be reminded of Jane's number and Janet's and Janice's as well as anybody with a birthday in January.)

"Records can be directed to a printer"

The final alternative is a useful facility called "Relational search". This enables search parameters to be set for any or all of the fields in the file. Using the personnel file example from the manual, this could allow you to search for all records with a Clock No greater than G108, Name less than Jones, Job title equal to Foreman, salary greater than £7000 and sex equal to male. All records that matched these criteria would then be displayed.

Records found in any of the above ways can be directed to a printer so that a hard copy can be obtained.

Additional features of the program are a Memory check facility which is handy when entering data and the option of totalling numeric fields. The latter can be used to obtain an instant value for overall wage bill, stock value etc.

Conclusion

Datapro lives up to its claim of replacing and improving on a card index system. It imposes limitations on the amount of data contained in a record but then so does an index card. Its only major drawback is the lack of a Centronics interface. The program is extremely easy to use and will be found invaluable for most home applications as well as a lot of serious business uses. Datapro costs £9.95 on cassette or £12.95 on disk – excellent value.

Contact: US Gold Ltd, Unit 10, The Parkway Industrial Estate, Heneage Street, Birmingham. Tel: 021-359 3020.

CLASSIFIED

SOPHISTICATED GAMES FOR VIC 20 & CBM 64

VIC/64 CRICKET Realistic games of tactical skill and luck. Ball by ball commentary with full scorecard and all the major rules of cricket correctly interpreted. Printer/game save facilities.
VIC CRICKET for VIC 20 + 16K 6.99
NEW: 64 CRICKET with extra features 7.99

LEAGUE SOCCER League title game for 2-24 players with automatic fixtures, action commentary, results check, scorers, league table, cup draw etc. Printer/game save facilities.
LEAGUE SOCCER for VIC 20 + 16K 6.99
NEW: 64 LEAGUE SOCCER with many more features still 7.99

WHODUNNIT 12 guests have gathered for drinks at Murder Manor, but one of them has more than drinks on his mind. Addictive and thrilling detective game for 1 to 6 players, with genuinely different game each time.
WHODUNNIT for VIC 20 + 8K or any CBM 64 (state which) 5.99

TOP OF THE POPS Easy to learn game about the music business. For up to 10 players. Includes printer/game save features.
TOP OF THE POPS for VIC 20 + 8K 5.99
NEW: 64 TOP OF THE POPS — even bigger and better 5.99

ELECTION NIGHT SPECIAL Lead your own party into the next General Election. A game for 1-3 players. Printer/game save.
ELECTION NIGHT SPECIAL for VIC 20 + 8K 5.99
64 ELECTION NIGHT SPECIAL — bigger and better .. 5.99

PARTY 4 Four games to match the progress of your party: MASTERWORD, A DAY AT THE RACES, GAME X (Strip Poker) and CONSEQUENCES. Harmless fun (nothing offensive) but good fun.
VIC PARTY 4 for VIC 20 + 3K or more 6.99
64 PARTY 4 ..... 6.99

*** NEW * ADULTS ONLY** Fun game for 2-10 broad-minded players. Lots of cuddling and kissing, plus many other rewards and forfeits: you never know what you'll end up doing, or with whom! Nothing offensive, but you MUST be fairly broadminded.
ADULTS ONLY for VIC 20 + 16K expansion 6.99
64 ADULTS ONLY 6.99

DISC VERSIONS AVAILABLE FOR ALL GAMES — £2.00 EXTRA
ALL PRICES INCLUDE P&P (UK ONLY). GAMES SOLD SUBJECT TO CONDITIONS OF SALE WHICH ARE AVAILABLE ON REQUEST.
PLEASE WRITE OR PHONE FOR DETAILS OF OUR FULL RANGE OF SOPHISTICATED GAMES
Dept CCI, 27 Queens Road, KEYNSHAM, Avon BS18 2NQ.
Tel 02756-3427

Home Accounts. Put your house in order! Probably the best home use for your computer! Comprehensive coverage of bank accounts, credit cards, HP, etc. Inbuilt accuracy check for all transactions. Projects cashflow for any period ahead. Available for CBM 64 or VIC 20. £8.45 or FREE details from DISCUS SOFTWARE, FREEPOST, Windmill Hill, Brixham, TQ5 9BR. Tel: 080 45 55532.

Great new range of computer adventure games for the Commodore 64. For full details send S.A.E. to:— Noble Enterprises, 126a, High Street, Gosport, Hants. PO12 1DU.

Toddlers! Play with your parents CBM64 — animated, musical, FLASHCARD, ALPHABET and SPELLING program developed in conjunction with schools and educational psychologist. Also operates with CURRAH speech synthesizer. French and Spanish versions also available. Disk £7.50, Cassette £5.00.

TODDLERSOFT, I Cat Lane, Ewelme, OXON OX9 6HX

COMMODORE REPAIRS

VIC 20's — £12.50, C-64's — £15.00, 1540/41 — £20.00, and all Commodore systems. Send faulty machine with note describing fault to:

TRIDENT ENTERPRISES LTD,
37 Linden House, Common Road, Langley, Slough,
Berks SL3 8TT. Tel: (0753) 48785.

(Above prices are exclusive of parts, p&p and VAT). Field Service and Maintenance contracts available. Overseas enquiries welcomed. We also repair QL's, BBC's and Spectrums.

COMMODORE 64 SOFTWARE

DATABASE: Datafile — a database with very powerful options. Includes:— print all/selective records, delete, amend, save, load, copy, alphanumeric sort, user defined fields, memory check, total numeric fields, multi-field interrelational, wildcard and search between limits. Multiple file option, and many more. Fully menu driven with complete instructions. Disk and cassette fully compiled. Outstanding value.
CBM 64 (compiled) cassette **£7.45**
CBM 64 (compiled) disk **£10.45**

WORD PROCESSOR: Textfile — powerful word processor. Facilities include: — large text buffer, auto centre text, variable tab, insert amend, delete, copy, move text, word count, right justify, pageing, join files, multiple file handling, print all/part text etc. Fully menu driven with comprehensive easy to use instructions. Great value.
CBM 64 (compiled) cassette **£8.25**
CBM 64 (compiled) disk **£10.75**

All programs complete with full documentation and guarantee and can be used with all direct connect CBM 64 printers including 1520 printer plotter and most centronics (with suitable hardware interface). Prices include VAT. Packing and fast delivery by 1st class mail.

Cheques/PO's to:
A & C SOFTWARE
Dept. 2, 75 Oakthorpe Gardens, Tividale, West Midlands B69 2LF.
Tel: 021-557 8596

Dutch CBM64 user wants to swap programs. Have already more than 1100 titles. Send list to Johan de Jong, van Baerlestiaat 280296 Gonda, Holland. — Disk only!

Commodore 64 owner wishes to swap software with anyone. Many American and English titles. Over 1000. Contact Patrick, 150 St Georges Road, Stoke, Coventry, England. Send your list on disk for mine.

VIC 20 + C2N + 1520 printer/plotter plus 16K, 8K, 3K RAM packs with over £100 of software including Introduction to Basic, Money Manager, Chess, Golf, etc. Offers please. (Windsor) 63022.

CBM64 user wants to swap disk or cassette based. Send letter disk or cassette with programs to Smit, PO Box 6, 5430 AA Cuyk, Holland.

COMMODORE REPAIRS
BY COMMODORE APPROVED ENGINEERS

VIC 20 modulators £6.50, VIC 20 from £14.50, CBM 64 from £18.00, C2N from £7.00, Printers, Disk unit etc., for more details, write or telephone

G. C. BUNCE AND SON
36 BURLINGTON ROAD, BURNHAM, BUCKS SL1 7BQ
Telephone: (06286) 61696

Commodore 64 software to sell or swap. Titles include BC, Moscow, Pitstop (1 + 2), Bungling Bay, Congo Bongo (1 + 2), Tapper, lots more American. Richard, 12 Prospect Lane, Harpenden, Herts, England. (05827) 69109.

Commodore 4032 business machine with sound chip and VDU, over £150 worth of software cassette and leads, perfect working order £325 ono. Bishops Stortford (0279) 723808.

Easyfile Future Finance, Intro to Basic, PAL Power and Infomast (all disk) for sale — sensible offers — will split. Phone Alan on Sheffield (0742) 662005.

C-64 user in Spain wants to swap programs, utilities and games from Europe and USA. On disk or tape if you are interested write to Juan Pablo Bustos, C/Baleares 3-5 (2°1°), Barcelono 08023, Spain.

Easystock package by Commodore. Includes manual and back-up copy. Brand new, came with disk drive as Easyscript replacement. Asking £45 ono. Ringmer, Nr Lewis, East Sussex 812034.

CGL Chess King Master, full size board and pieces. Plays all moves up to Grandmaster, brand new, still boxed. Wanted — commodore 1520 colour printer, or disk drive, or software. (0726) 63501.

CLASSIFIED

CBM64 software for sale many titles inc. Easyscript + 6 games (unopened) for just £30ono (worth over £100) or will swap for Easyfile or Superbase. Phone Spencer on Grays 891815.

Wanted machine code routines for CBM64. Send to Ken Smith, 73 Wakefield Street, East Ham, London E6 1NR.

CBM MPS801 printer, 6 months old, mint condition, £110. Bracknell (0344) 57867.

Commodore 64 looks for other CBM64 users to exchange programs (utilities and games). I have many programs on disk. If you are interested send list to: Alfonso Bolognini, 15 Via Savoia, Sassari 07100. Italy.

Commodore PET (2001/8K) computer integral screen/cassette, programs, £85, might break (state spares required). Exchange PET plus cash colour monitor 14" TV amateur band transceiver electronic typewriter with interface. Wirksworth 3207.

Accounting Part 1: for O/A, GCE/BEC/ equivalents; CBM64 £9.50 cassette, £12.95 disk, G W & A Hesketh, PO Box 8, Ormskirk L39 5HH.

CBM64 owner wishes to swap software. Disk or also through modem. Lists to Barry Bassett, 34 Birchen Grove, London NW9 8SA. Tel: 205 1856. Compunet ID: JB84.

Over 130 CBM64 original titles. Include Calc Result Advanced £75ono. Also 3 games for the price of 1 on any of above. Soccer £10. Phone 01-748 8178. 6pm-10pm weekdays — all day weekends.

Hello — nice day we're having! More than 1500 programs available for your C-64. Also some stuff for Apple and Atari. Post your list and animals to J. Torppa, Kaustisenpolku 3B32, 00420 Helsinki, Finland, Goodbye.

Commodore 64 games to swap. I have more than 600 games on disk. Please send list and I return my list. Marco Hoogendijk Dresdenlaan 28, 3055 We Rotterdam, Netherlands.

CBM64 owner wishes to swap software with users abroad. Have around 800 programs. Send list to W Atkinson, 7 Silverlands Ave, Oldbury, Warley, West Midlands, B68 8EQ. England. Phone 021-552 1160.

CBM64 user wants to swap programs. I have over 1400 titles disk or tape. Send list to Jaap Dockter Bauerstraat 9, 4205 KA Corkum, Holland. Every letter answered.

Swopitus cured! Send list of symptoms so successful transplants can occur. 400 + latest remedies. Write to Paul, Flat 4, 25 Western Parade, Southsea, Portsmouth, Hants, England.

Wanted, disk drive and printer for CBM64. Good condition. Write or telephone stating price/age of disk drive or printer — delivery etc. Asheet Machotra (0703) 787528.

Bargain! CBM64 Easyscript and future Finance, perfect condition with manuals, only £50 for both. (Will separate). I R Corden, 72 Park Road, Werrington, Stoke on Trent, Staffs ST9 0EB. Tel: 9730 14409.

For sale C64, 1541, MPS801, C2N, 100 programs, 10 disks, 20 + tapes, desk, Intro to Basic (parts 1 & 2) PRG, joysticks, magazines. Baby forces sale £500 or split. Mr Johnson, 12 McNeill Road, Larkhill, Salisbury SP4 8QF.

CBM64, C2N, joysticks, Intro to Basic part 1, books games utilities, all as new. If bought today cost £450 +. Will sell for £300. Phone Phil on 0952 606184 any evening except Monday.

C-64 games to swap eg Karate Champ, Gyruss, Baseball, Basketball, SAM. Send list to Kevin Callaghan, 16 Silcoates Street, Wakefield WF2 0DU. Ring 0924 369925. Prefer tape but will consider disk.

CBM64 owner wishes to swap software — tape only. Send list to Danny Carr, The Lowlands, Chowley, Broxton Nr Chester CH3 9JR.

For sale — PET 2040 series dual disk drive and terminal 8024 printer + all leads, working order, 5-years-old, £600ono. Would consider splitting. 01-393 9068 evenings. Could deliver locally.

Collectors all over the world — Dutch CBM64 owner wishes to swap software on tape. Have over 600 titles. Send your list big or small. All letters answered. Henk v Ingen, Wilgengriend 138, 1356 JL, Almere, The Netherlands.

VIC 20, 16K RAM, 3K graphics RAM motherboard, prog reference guide, assembler tutor prog aid cartridge, 5 games cartridges, 10 games tapes, all boxed and in very good condition, £130. Ralph 01-579 1507.

USA C-64 user wants female pen-pal. Mark, PO Box 583, Lake Orion, MI, USA 48035.

Commodore 4016 12" screen, excellent condition, including tape and manuals. Any reasonable offer accepted. Mr C Black, (Southampton) 553148.

Free to good home, pile of 64 software due to change of hobby. Send address. All replies will be put into hat and winner sent software. Graham Chester, 277 Wellington Street, Grimsby.

Has anyone bought 'Cricket 64' for CBM64. Author would like to know. Please write to 73 Wakefield Street, East Ham, London E6 1NR.

CBM64 wants to swap software on cassette, many new titles available. Send lists to Steve Christian, 45 Wallgate Road, Childwall, Liverpool 25.

CBM64 games — all original titles, eg Battle Midway £3, Daley Thompson Decathlon £2.50, Krystals of Zong £2.50, plus many more. Ring Keighley 67229 and ask for Mick between 5.30pm and 7.00pm.

Finnish 64 owner would like to exchange software on disk or on cassette with an American or European 64er. I have over 500 different programs to 64. I try to answer all letters. Write to Jussi Rantala, KP3, 61600 Jalasjäris, Finland.

Wanted urgently — White Lightning and/or Machine Lightning on disk. Phone 01-748 8178 weekends.

C-64, VIC 20 software for sale, US + UK cartridges, disks, tapes all originals — no rubbish. (Might swap C-64 disks). Write for list to John Keogh, 30 Highwood Avenue, Finchley, London N12 8QP.

Swap my games for CBM64. Send your list or letter to: Tore Engrik, Aasliveien 18, 1890 Rakkestad, Norway. I swap games with any person in the world.

CBM64 owner wishes to swap software. Send list to P Holt, 35 Windsor Avenue, Oldbury, Warley, West Midlands B68 8PA, England. Tel: 021-552 1903 after 5-10pm (disk only).

CLASSIFIED

CBM64 CP/M. Does anyone have CP/M programs for CBM64 to swap. Bjørn Haaland, Kråkstadvn 36, n-1825 Tomter, Norway.

CBM 8032, 8050 disks, Epson MX 100/3 printer, Visicalc Calc Result, Papermate, disks and books for sale or lease. Phone Oxford 721240 or 01-745 7600 in office hours.

Commodore 4032 (upgrade 2001). Green screen, integral cassette, sound box, detachable full size keyboard, programs, earphones, reset switch, £200. Would consider colour monitor/ 14" TV/electronic typewriter part exchange. Wirksworth 3207.

Infocom, Epyx/CBS, Datasoft Atarisoft, Access, English Software, Melbourne House, US Gold, Synesoft, Synapse, Ocean, Activision, Alligata, Software Projects, Honeyfold, Highlight Software, sale or swap. Ring Nicky at 01-743 1809. 5-10pm.

VIC 20 software for sale at bargain prices. For list send SAE to P Hewitt, 17 Michell Close, Wilmington, Dartford, Kent DA1 1PJ.

64 who wants to swap games! Tape only! Send list to Hassche, Pt Hangendijkstr 49, 797inc Goor, Holland.

Easyscript — £45. Future Finance £40. £75 for both. Retail price £75 each. Tel: 08045 7455 evenings.

CBM64 software to sell/swap, including Zaxxon, Slapshot, J S Willy, Bruce Lee, and many more. All for less than half price. Phone Roger for prices. Holmes Chapel (0477) 33012.

Dutch 64 owner would like to exchange software tape and disk. Also American stuff available like: Rainbow Walker, NY City, Musicshop, Mr Do's Castle. All Synapse, Brodesbund, Electr. Arts stuff available. Arjen De Jong, Veizetsstiaat 25, 1541 HB Koog Aan de Zaan.

Italian Plus/4 owner wishes to swap software for Commodore C-16 and Plus/4. Please write to Aldo Bordieri, via Maiocchi 19, 20129 Milano, Italy.

CBM 64 user in Denmark wishes to swap software. More than 800 titles. Send your list to Andy Hulstrøm, Skovparken 22, 4220 Korsøk, Denmark.

Unused, unwanted double-sided, double density disks — £1.60 each (Sentinel). Phone Rich before 5.00pm on Luton (0582) 459376 or after 7.00pm on Stevenage (0438) 64485.

Dutch 64 user wants to swap over 700 programs. All disk-based. Send list or diskette to Uiver, Engelsestraat 28, U6 11RR Bergen, op Zoom, the Netherlands. All over the world. Especially USA.

Wanted — Cadcam Warrior, Suicide Express, Spy Hunter for C-64. Will pay (original only please) reasonable price. Ring 021-743 9918 or write — Neil Reynolds, 55 Leam Crescent, Solihull, West Midlands B92 8PB.

MPS801 printer £200 inc delivery. Also tape software: Spy Vs Spy £5, Pharaoh's Curse £4, Soccer cartridge £5. Also brand new disks £1.50 each. Might swap software. Tel: 266855 (Waterlooville) after 6pm.

Swap my Tokai Strat Guitar, Marshall 30w combo amp, chorus pedal for your 1541 disk + lots of s/w. Will sell the above for £300ono. Tel: (0248) 670264 (N. Wales). Swapper collects.

Practicalc (RRP £45) for £25!! The best spreadsheet Paperclip (RRP £100) for £60!! The very best word processor. Unwanted gifts. Unused. Perfect condition. Phone 01-828 0019 daytime only.

CBM64 games: 13 Mastertronics, Fighter Pilot, Jet Set Willy, Jack Beanstalk, Slinky, Daley's Decathlon, Strip Poker, Encounter, Cosmic Convoy, Danger Mouse, all originals and many others for £40. Ring 051-260 2178.

Swap programs for VIC 20. Send 5 progs (on tape only) and get 5 back. Antonio Termeer, Bronkhorststraat 19, 6681AN Bemmel, Holland.

CBM64 software for sale £2. Buy two get one free. Great games (American and English) such as Slapshot, Hunchback 2, Kong Strikes Back and loads more. Please ring Romford 49367 after 4.30pm.

For sale CBM64 plus datasette unit and two joysticks. Also approx 20 good games. Impossible Mission, Valhalla etc, vgc, £200. Paul. Tel: 01-771 9655 or Orp 32939 anytime.

Wanted — VIC 20 16/32K RAM switchable. Sensible offers please. Tel: 01-927 1039 day, 0342 712086 after 7pm week nights.

Commodore 64 software to swap. Lots of American titles. Phone (Rugby) 0788 73067 and ask for Tom or 0788 813452 and ask for Lee, only after 6pm. We have over 200 titles.

1520 printer/plotter for Commodore 64 or VIC 20. Brand new, unwanted gift £75 ono including post and packing. Tel: (0924) 402453 or write to Andrew Broadbent, 19 Quarry Road, Liversedge, West Yorks WF15 7HG.

CBM64 in France with about 120 programs looks for software to exchange. T Robert, 13 Bd Ganay, Entrée H, 13009 Marseille, France.

Aventures — can anyone help me solve Zim Sala Bim, Nuclear Wargames, Hulk or Aztec Tomb. Ring 0484 512365 after 7.00pm + swap Dallas Quest for any Trillium disk adventure (Not Amazon).

CBM64 machine code beginner search for other coders to exchange tips, routines, ideas etc. Phone 01-870 8944 ask for Cory.

Wanted CBM1520 printer must be in good condition and have full instructions. Will swap for software of your choice from over 200 titles (within reason) Steve, 45 Wallgate Road, Liverpool 25.

CBM 4032 with 4040 drives and 4022 printer vgc. All leads £500. Buyer to collect. Please ring 0524 751699 evening only — bargain.

CBM64 user wishes to swap software. Send list to M Cortes, Calle Colóu, 20 Silla (Volencia) Spain. Disk or tape.

Nine Thousand Channel radio ham cost £250 — swap for CBM64 printer must be in very good condition. Tel: (0685) 70796.

HELP. I am wanting to give demo of 64's music to club. Anyone having files/music for master composer or synth, Kawasaki etc please write to Taff, PO Box 48, Derby DE6 6QP. Would like copy of your music or will exchange/trade.

CLASSIFIED

CBM64 user wishes to swap games, utilities and business software. Several hundred titles available. Send list and SAE to Bob (CNET RW3), 64 Camborne Road, Horfield, Bristol, Avon BS7 0DW.

For sale: VIC 20 and cassette unit, 16K RAM pack, Intro to Basic, Adventure book, games including Bongo, Willy, Gridrunner, Magazines, Cartridge. Sell for £110 ono. Please contact: David McKenzie, 18 Oxhill Place, Dumbarton, Scotland.

CBM software to sell. Titles such as Frack, Raid Over Moscow. It would cost £230. Will sell for £100. Tel: Patrick 01-690 3649 after 4pm.

Commodore printer — MPS1526. Cost 345 but will sell for the price of an MPS801 — Only £199. Ring Ian on 01-595 8822.

CBM64 owner wants to swap software with people all over the world. I have CA 350 programs (tape). Write to Jens Asbsorn Rodset, Gjerdsvegen, 6010 Spjelkavik, Norway. All letters answered.

CBM64 I would like to exchange letters, info, utilities & software, male/female using disk or tape, write to: Stephen Futcher, 'Holly Lodge', St. Annes Glade, Bagshot, Surrey GU19 5EF.

CBM64 original games — Spitfire Ace £7, Daley Thompson £7. Phone 0423 60688 after 6.00pm. Ask for Ian.

CBM64 software to swap, I have nearly 300 titles on tape. Send your list to G Saxton, 20 Castle Walk, Hyson Green, Nottingham NG7 6DZ, England. All letters will be answered.

CBM64 I would like to exchange game or utilities. I have about 2000 programs. I will answer to any letter you will send me. Write to Trave Paolo, V Mascagni, 11 10092, Beinasco-Torino, Italy.

Interceptor assembler £1, Mastercode assembler (+ book) £5. HES Professional assembler dev system £5. Simply Assemble £10.00. Victree cartridge £20.00. All original, postage included, Chris Green, PDO OC Dept, PO Box 81, Muscat, Sultanate of Oman.

Wanted — Commodore 4040 or 2031 disk drive, compatible with CBM 4000 series. Trevor Rice. Tel: Southampton (0703) 582858 or Chandlersford (04215) 68115.

HERE'S MY CLASSIFIED AD

I make this _____ words, at _____ per word so I enclose £ _____

Please continue on a separate sheet of paper for trade advertisements.

Name _____

Address _____

_____ **Telephone** _____

Send your classified entries to:

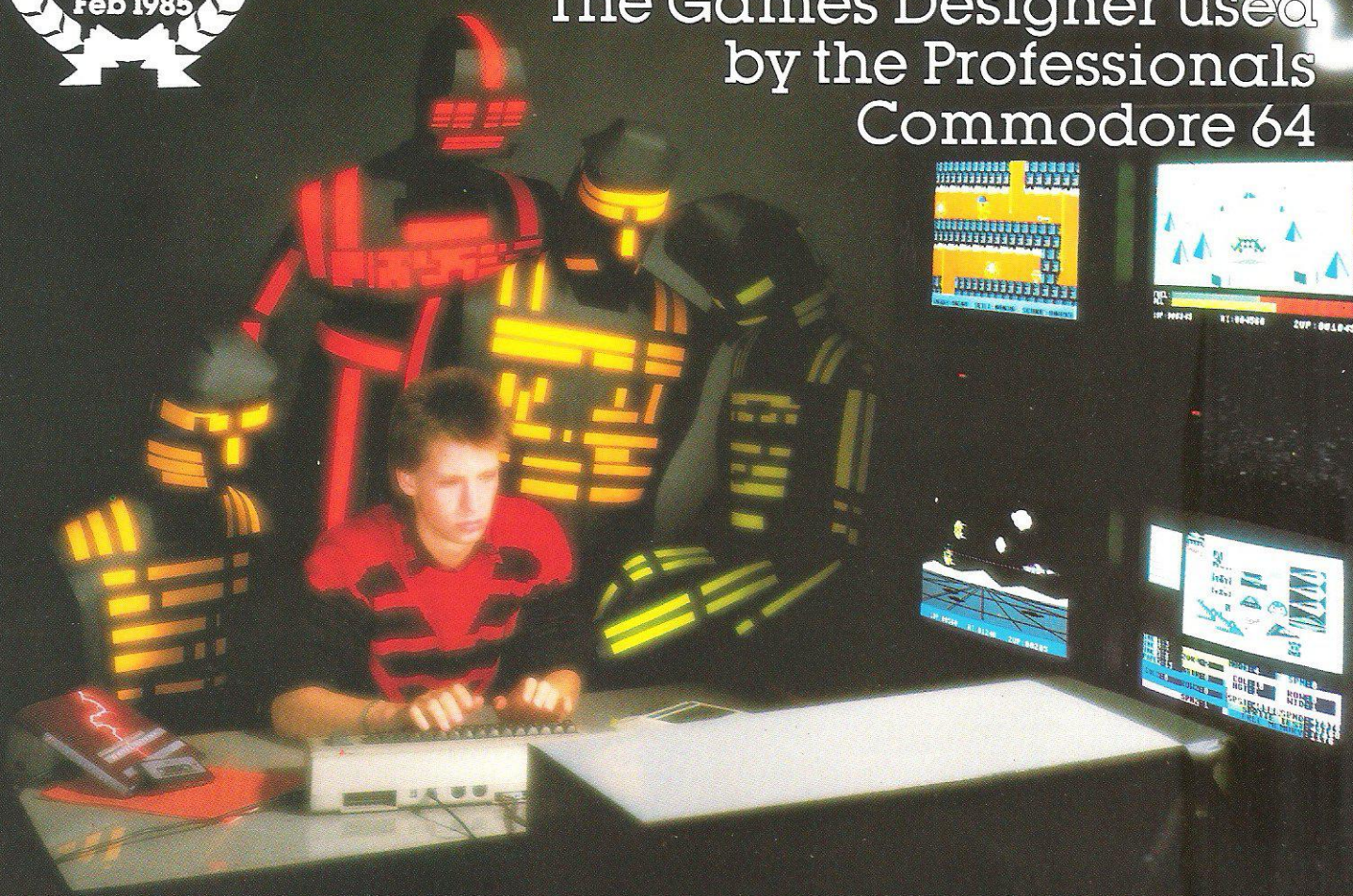
Classified Department,
Commodore Computing International Magazine,
40 Bowling Green Lane,
London EC1R
Tel: 01-278 0333

Private readers — Free (max. 32 words)
Trade advertisements — cost 40p a word
Semi-display — why not make your advertisements more substantial by choosing the semi-display rate. It is only £8 a single column centimetre.
Please ensure that **all** classified advertisements are prepaid.

White Lightning

Program of the Year (Utility) L.E.T. C.T.A. Awards Feb 1985

The Games Designer used by the Professionals Commodore 64



Now, without any knowledge of machine code, you can write fast, smooth, professional, totally original games and market them without paying royalties.
Even if you have already mastered machine code, we believe that the time and problems saved by writing in White Lightning's **FORTH**-based high level language could revolutionise commercial games writing for years to come.
IDEAL IDEAL is an Interrupt Driven Extendible Animation sub-Language. Once you have mastered IDEAL's easy to learn set of over 100 commands and just a little FORTH, you will be ready to produce arcade-quality games even if you don't know machine code. Up to 255 software sprites, each with its own user-defined dimensions, can be moved around the screen (or memory), scrolled, spun, reflected, enlarged or inverted with amazing speed and smoothness. Operations are possible between screen windows, sprites and sprite windows. Software sprites can even stretch across several screens, so those difficult scrolling landscapes that form the basis of so many games are easy to achieve. White Lightning also adds PLOT, DRAW, POLY and CIRCLE as well as fully supporting the Commodore's own excellent hardware sprites and sound facilities. The IDEAL routines operate in hi-res or 4-color modes.
MULTI-TASKING Because White Lightning uses **interrupts**, you can effectively run two programs at once. This means, of course, that games like Space Invaders and Defender can be written without complex timing calculations. So while one program smoothly scrolls the landscape, the second amimates the other characters. This is undoubtedly one of White Lightning's most powerful features.
MARKETING AND PORTABILITY Although White Lightning uses an integer FORTH as its host language, programs can be written in a combination of Commodore BASIC, FORTH, IDEAL and machine language. The final program will run independently of White Lightning and absolutely no marketing restrictions are imposed.
BASIC LIGHTNING In addition to the White Lightning program itself, the package also includes an extended BASIC. This BASIC adds more than **200** reserved words including all the IDEAL commands, procedures and a full set of **structured programming commands**. Up to five tasks can be run simultaneously. BASIC Lightning is also available separately.
SPRITE DESIGN White Lightning comes complete with a separate sprite designing program. Two libraries of sprites are included and up to 255 sprites can be designed with loading and saving facilities between sessions.
The package comes complete with two 100-page manuals and a free demonstration program is included to show off the potential of the system.

Please send me the following Lightning Systems Pack(s)

- Basic Lightning Tape (£14.95) ☐
- Basic Lightning Disc (£19.95) ☐
- White Lightning Tape (£19.95) ☐
- White Lightning Disk (£29.95) ☐

I enclose my cheque/P.O. for £ _____
24-hour Access Tele-ordering on (0934 419921)

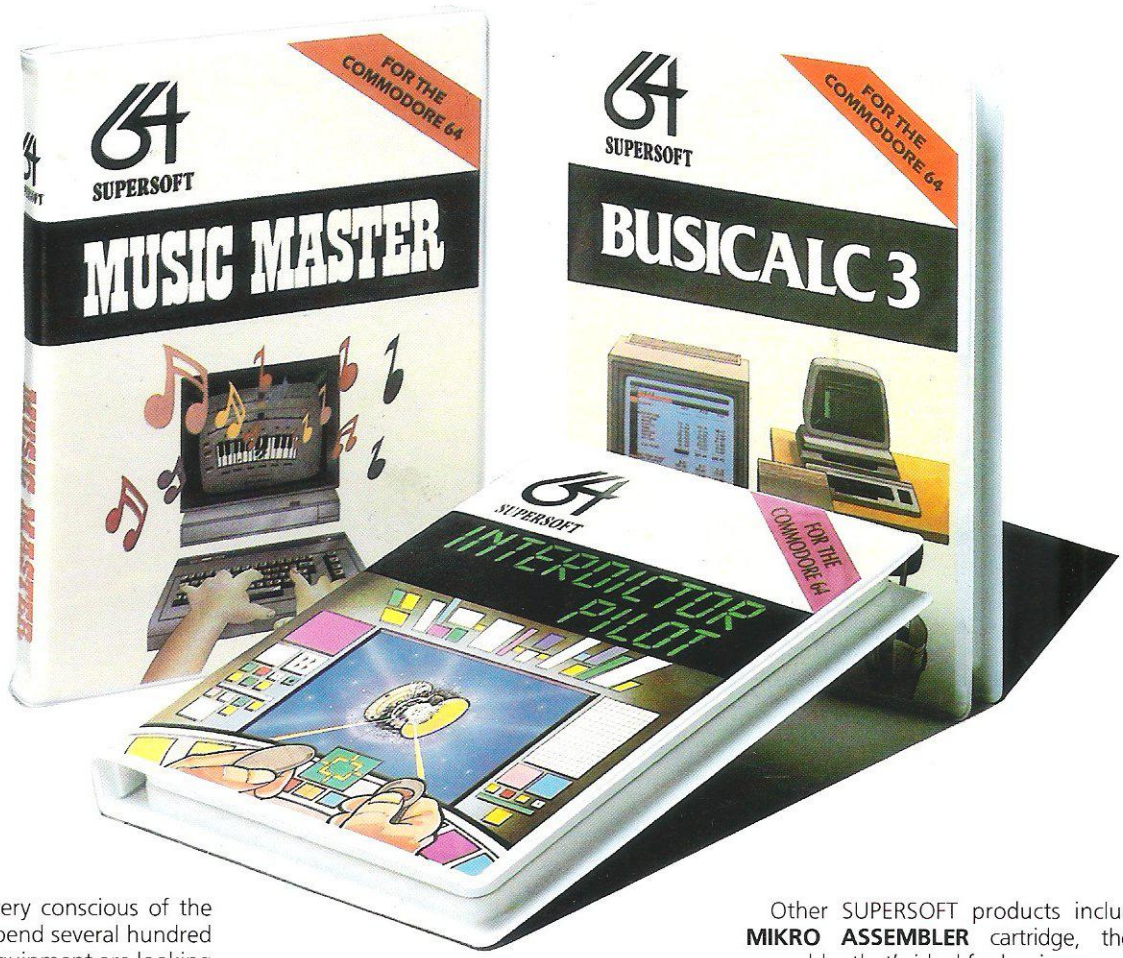
Name _____
Address _____
_____
Postcode _____
Telephone _____

Every product carries a lifetime guarantee. All prices include comprehensive manuals, V.A.T. and p & p. and includes manuals and p & p for overseas. Overseas customers requiring air mail add £5.00. All payments in £ sterling. Please send A4 (297mm x 216mm) S.A.E. for our extensive product range catalogue.

OASIS SOFTWARE

12 Walliscote Road, Weston-super-Mare, Avon BS23 1UG.
Telephone: (0934) 419921. Telex 437287 Sharet G.

Choosing the right computer is a good start — but can you find the right software?



At SUPERSOFT we're very conscious of the fact that people who spend several hundred pounds on computer equipment are looking to do rather more than play Space Invaders.

Financial planning is a rather grand name for sornething you've been doing all your life – making ends meet! Perhaps if Mr Micawber had used **BUSICALC** he would have been able to balance the books a little better.

For home, club or small business use BUSICALC 1 should pay for itself in no time at all; for larger companies we recommend BUSICALC 3, one of the few really valuable programs that you can learn to use in a day.

Although your Commodore 64 is a powerful musical instrument you need to be a pretty good programmer to understand how it all works. Unless, of course, you buy **MUSIC MASTER!**

To use MUSIC MASTER requires no prior musical knowledge, though in the hands of an experienced musician it will prove an invaluable tool. You don't need to know the first thing about programming either! MUSIC MASTER is the musical equivalent of a word processor, remembering the notes you play and allowing you to replay and edit them as you wish.

INTERDICTOR PILOT is a space flight simulator. Nowadays simulators are widely used to train pilots and astronauts because – to be frank – it's a lot cheaper (and safer) than the real thing!

Imagine, if you will, life in the 22nd century: space travel is commonplace, and on the outskirts of the galaxy the first war between civilizations is being fought. A shortage of trained pilots has prompted the Federation to develop a computer simulation that allows raw recruits to gain experience without paying for their mistakes with their lives. With the aid of your Commodore 64 you too can learn to pilot the Interdictor Mk 3 craft. But be warned – this is no game!

Other SUPERSOFT products include the **MIKRO ASSEMBLER** cartridge, the only assembler that's ideal for beginners yet powerful enough for the professional (most of our competitors use it!). The **VICTREE** cartridge adds dozens of commands to Basic including toolkit aids and disk commands; or on disk there's **MASTER 64,** a really comprehensive package for the keen programmer.

Of course, we do also publish games programs, and with classics like **STIX, QUINX** and **KAMI-KAZE** in our range we are one of the market leaders. But we most enjoy coming up with the sort of programs that are going to be in use for months and years, not hours and days – the sort of programs that make you glad that you bought a computer – and glad that you bought SUPERSOFT!

You won't find SUPERSOFT products on the shelves of your local supermarket. But most specialist shops stock titles from our extensive range (and are prepared to obtain other programs to order). However you can also buy direct by sending a cheque (pre-paid orders are post free!), by calling at our offices, or over the telephone using your ACCESS card.

SUPERSOFT

SUPERSOFT, Winchester House, Canning Road, Wealdstone, Harrow, Middlesex HA3 7SJ
Telephone: 01-861 1166